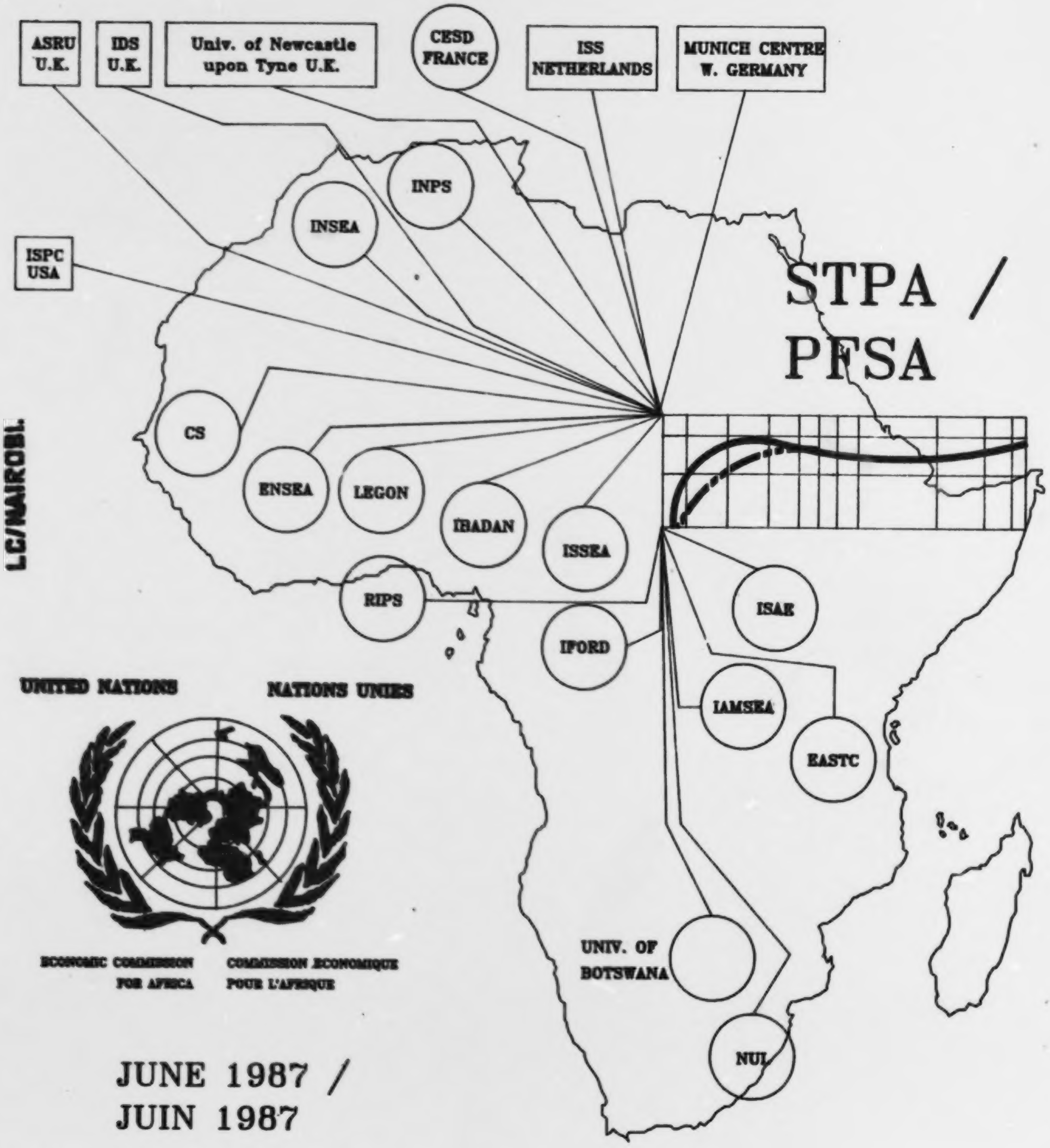
E/ECA/STPA/DM.5/10

Directory of Statistical Training Centres and Associate Centres Participating in the Statistical Training Programme for Africa / Répertoire des centres de formation statistique et des centres associés participant au programme de formation statistique pour l'Afrique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Fifth Meeting of Directors of Centres Participating
in the Statistical Training Programme for Africa (STPA)

Addis Ababa, Ethiopia, 26-30 October 1987

DIRECTORY OF STATISTICAL TRAINING CENTRES AND ASSOCIATE CENTRES PARTICIPATING IN THE STATISTICAL TRAINING PROGRAMME FOR AFRICA (STPA)

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INTRODUCTION

The Statistical Training Programme for Africa (STPA) continues to pursue its objectives in the area of dissemination of information on statistical training activities of interest to the countries of the region.

The first issue of the directory of STPA centres was published during 1979 and was followed by the second and third issues in 1981 and 1983. At the third meeting of Directors of STPA centres in 1983, the ECA secretariat was requested to include associate centres in the directory. This resulted in the change of the name of the directory to "Directory of Statistical Training Centres and Associate centres participating in the Statistical Training Programme for Africa" whose first issue was published in June 1985 and the present directory is the second issue.

The information contained in the 1985 issue has been updated, in doing so the secretariat requested the STPA centres to communicate to it any changes which had occured since 1985 and also to supply relevant additional information which was not included in that directory. A similar request was made to the associate centres. It should be mentioned that the response from the STPA centres and associate centres was relatively satisfactory in the provision of the information.

In this directory one additional associate centre, the University of Newcastle upon Tyne, U.K., has been included following the agreement by the fourth meeting of Directors of STPA centres, Addis Ababa, November 1985. The result is that there are now six associate STPA centres.

The ECA secretariat continues to believe that regular and timely dissemination of such information is one of the ways of stimulating the improvement of statistical training activities in the region. It is hoped that a wide dissemination of the present issue of the Directory of STPA centres and associate centres can be ensured with the help of the National Statistical Offices and training centres.

1. Country : Botswana

2. Name of the Centre: Department of Statistics

3. Attached to : University College of Botswana

4. Address : Private Bag 0022
Gaborone
Botswana

5. Name of the Director : Prof. R.K. Pillai

6-7 Objectives and brief historical background

The Department of Statistics of the University College of Botswana, was part of the UNESCO Regional project set up in 1973 at the University of Botswana, Lesotho and Swaziland (UBLS). The training programme of that project was supposed to assist in the training of higher middle level statisticians in response to the demand of the countries concerned and to introduce statistical methods in other faculties such as Economies. Since the dissolution of the UBLS in 1976, the centre has taken on diploma and professional statistical training at degree level in addition to the certificate level.

8. Academic staff

There are a total of nine academic members of staff in the Department.

9. Teaching programmes

The Department is at present running the following programmes:

(a) Certificate in statistics
(b) Diploma in statistics
(c) Degree in statistics

(a) Certificate in statistics

i) Duration of the course : one year
ii) Number of places offered in 1983 : 30
iii) Courses and assessment

- Courses: The teaching programme consists of a principal subject statistics (12 lecture hours or equivalent per week) and a secondary subject English (6 lecture hours or equivalent per week). The subject English shall consist of English language and literature and shall be called communication skills and introduction to literature.

			No. of lecture hours
Statistics: Courses	CS001	Statistics	3
	CS 002	Applied Statistics	3
	MS101	Mathematics for Social Sciences	3
	EC101	Basic Economics	3
	E101	Communication Skills and Introduction to Literature	6

In addition to the courses listed above, each student shall be required to participate in a series of seminars on official statistics organised by the Department. This participation will not be taken into account in assessing the overall performance.

- Assessment: The ratio between continuous assessment and final examination shall be 2:3. The principal subject shall be examined in four papers each of 3 hour duration. The overall average of the students performance at the end of the year shall be calculated on the basis of a weighting of 2:1 in favour of the principal subject. In order to be awarded a certificate, a student must obtain a minimum of 50 per cent in each course in the secondary subject.

(b) Diploma in statistics

i) Duration of the course: two years
ii) Number of places offered in 1983: 20
iii) Courses and assessment

- Courses: In each year the principal subject shall be statistics and the secondary subject shall be applied statistics.

1st year

Statistics:	ST202	Calculus and Linear Algebra
	ST203	Introduction to Probability
	ST205	Calculus and Linear Algebra
	ST303	Computer Programming
Applied Statistics	DEM201	Demographic Methods
	EC204	Microeconomics

2nd year

Statistics	ST301	Statistical Tools and Techniques
	DS202	Sampling and Design of Experiments
	ST304	Survey Research Techniques
Applied Statistics	DEM301	Indirect Estimation Techniques
	EC205	Macro Economics

Note: In the first year, the principal subject shall consist of 12 lecture hours or equivalent per week and the secondary subject shall consist of 6 lecture hours or equivalent per week. In the second year the principal subject shall consist of 9 lecture hours or equivalent per week and the secondary subject shall consist of 6 lecture hours or equivalent per week.

- **Assessment:** The ratio between continuous assessment and formal examination shall be 2:3. The number of examination papers to be given each year shall be:

Year 1	Number of papers	Duration of papers
Principal subject	4	3 hours
Secondary subject	2	3 hours
Year 2		
Principal subject	3	3 hours
Secondary subject	2	3 hours

The overall average of a student's performance shall be calculated on the basis of the ratio 2:1 in year 1 and 3:2 in year two between the principal subject and the secondary subject.

c) B.A. degree programme in Statistics

i) Duration of the course: four years
ii) Number of places offered in 1983: 20
iii) Courses

The Department offers statistics as a subject in the single major and combined major programmes for the B.A. degree. The courses to be taken each year of the programme are as follows:

Year 1

A student intending to major in statistics shall take the following courses in addition to other courses

ST101	Elements of Statistics
MS101	Mathematics for Social Sciences

Year 2

A student shall take the following courses in addition to other courses:

ST202	Introduction to Statistics
ST203	Introduction to Probability
ST205	Calculus and Linear Algebra

Year 3

Single major programme

ST301	Statistical Tools and Techniques
ST302	Probability Distribution
ST303	Computer Programming
ST304	Survey Research Techniques

and any two of the following:

ST305	Operation Research
ST306	Mathematics for Statistics
DEM201	Demographic Methods
EC301	Intermediate Economic Theory

Double major programme

ST301	Statistical Tools and Techniques
ST302	Probability Distribution

and any one of the following:

ST303	Computer programming
ST305	Operations Research
EC301	Intermediate Economic Theory
DEM201	Demographic Methods

Year 4

Single major programme

ST401	Statistical Inference
ST402	Sampling techniques
ST403	Design and Analysis of Experiments
ST404	Econometrics and Industrial Statistics

and any one of the following:

ST405	Introduction to Stochastic Process
ST403	Introduction to Multivariate Analysis
DEM301	Indirect Estimation Techniques

Double major programme

ST401	Statistical Inference
ST402	Sampling Techniques

and any one of the following:

ST403	Design and Analysis of Experiments
ST404	Econometrics and Industrial Statistics
DEM301	Indirect Estimation Techniques

10. Admission requirements

(a) Certificate in statistics

The normal entrance requirements for the Certificate in statistics is a third Division in the Cambridge Overseas School Certificate as well as a pass in mathematics. However applicants with a lower grade in the Cambridge Overseas School Certificate but with a pass in mathematics will be considered for admission.

(b) Diploma in statistics

A pass in the certificate in statistics course or equivalent qualifications as approved by the Senate after consultation with the Departmental Board.

(c) B.A. Degree Programme in statistics

The normal requirement for entrance to degree courses is a Cambridge Overseas School Certificate in the First or Second Division with a credit in English language and a credit in Mathematics. Other qualifications may be accepted on their merits as alternatives.

11. Fees

		Full time	Part-time
Bachelors degree :	Citizens :	P1,800	P1,500
	Non-citizens:	P3,600	P3,000
Certificate/diplomas:	Citizens :	P1,800	P1,500
	Non-citizens:	P3,600	P3,000

12. Fellowships

-

13. Living conditions

Full-time students are required to live in an approved halls of residence on the campus. The halls of residence are well equipped.

14. Intake and output

The student output of the University College of Botswana by teaching programme from 1978 to 1981 is as follows:

Course Year	Certificate in statistics	Diploma in statistics	Degree in statistics
1978	9	1	11
1979	9	2	10
1980	15	6	4
1981	12	3	7

1. **Country** : Ghana

2. **Name of the Centre:** Regional Institute for Population Studies (RIPS)

3. **Attached to** : University of Ghana, Legon

4. **Address** : Post Office Box 96
Legon, Ghana

5. **Name of Director** : Dr. P.O. Ohadike (Ag.)

6. **Objectives**

The Institute aims at promoting and strengthening research and training in demography and related fields in mainly the English-speaking countries of Africa. In the short term the Institute endeavours to:

(a) provide courses of intensive classroom training in demography and related fields;

(b) provide ad hoc courses, in-service training and special courses;

(c) conduct, guide, and in consultation with the United Nations, publish technical as well as applied research on population trends and their relation to social and economic factors;

(d) undertake and publish the results of field research work within mainly the English-speaking countries of Africa.

(e) provide information and advisory services in demography and related fields at the request of the English-speaking African countries.

7. **Brief historical background**

The Regional Institute for Population Studies (RIPS) was established in Ghana, on the same basis as for IFORD, to serve the English-speaking countries of Africa. It was established on 1st February 1972 following an agreement signed on 3 December 1971 between the Government of the Republic of Ghana and the United Nations Organisation.

In line with the General Assembly resolution 32/197 of 20th December 1977, the management of the Institute was decentralised and the Economic Commission for Africa became the United Nations executing agency for the project. Later, in March 1979, the fifth meeting of the Conference of Ministers of the Commission, in its Resolution 367 (XIV), adopted the view that the Institute be fully regionalised and the Executive Secretary initiated action to implement the resolution. The sixth meeting of the Conference of Ministers of the Commission in April 1980 noted, in its Resolution 393(XV), the action already taken by the Executive Secretary, and endorsed the new Statutes adopted for the Institute by the Technical Preparatory Committee. By Decision 37/444 of 21 December 1982, the General Assembly of the United Nations approved the new statutes of RIPS and endorsed the observations and understandings reflected in the Report of the Advisory Committee on Administrative and Budgetary Questions.

5. Academic staff

The permanent teaching staff of the Institute is composed of the Director, 4 United Nations experts and 2 demographers supplied by the Government of Ghana.

Short-term consultants are supplied by the Economic Commission for Africa at the request of the Director. Part-time lecturers are also recruited locally from the Universities in Ghana to teach some specialised courses.

6. Teaching programme

Following the recommendations of the Advisory Board of Studies of RIPS during its fifth meeting in Accra 17-20 December 1984, and the subsequent approval of the recommendations by the University of Ghana with effect from 1 October 1985, the Institute provides the following three courses of study:

- A 12-month course of study leading to the M.A. degree in Population Studies of the University of Ghana (Replaces the 12-month Graduate Diploma Programme phased out in September 1985);
- A second course of study by research leading to M.Phil in Population Studies of the University of Ghana (Replaces the M.A. programme by research); and
- A course of study leading to the Ph.D degree in Population Studies of the University of Ghana.

a) The 12-month course of study leading to the Master of Arts degree in Population Studies

This course is designed to meet the need for professional training in population studies and research for persons who hold a good first degree. The emphasis during the first three terms are on course work leading to a written examination in June of each year. The fourth term is devoted entirely to non-course work involving mainly the preparation of a research paper presented and examined in a research seminar in September of each year.

The course of study is structured to contain:

i) Introductory and support courses which provide participants with a basic knowledge, in the main disciplines which will be covered in the course;

ii) Core courses, which concentrate on the major concepts and theories in the area of population studies;

iii) Courses leading to area of specialization. Such areas will be fields to which candidates would wish to devote their attention in their research for the M.A. or in further work for higher degrees;

iv) Training in conducting and carrying out research in the field of population studies.

The course of study is evenly divided between course work and research and covers the subjects, Technical Demography; Substantive Demography; Population and Development Inter-relationships, or Linear Models, Sampling Theory and Actuarial Methods as alternatives; Research and Computational Methods; and a Research Seminar.

The examination for the Master of Arts in Population Studies consists of:

i) A three hour paper in Technical Demography

ii) A three hour paper in Substantive Demography

iii) A three hour paper on areas of specialization chosen from either: Mathematical Demography, Sampling Techniques and Actuarial Methods; or Population and Development Inter-relationships;

iv) Work on Research and Computational Methods examined through continuous assessment;

v) A dessertation of not more than 20,000 words on an approved topic to be worked on and submitted during the fourth term.

b) Master of Philosophy in Population Studies

The M.Phil degree in Population Studies is designed to develop the capacity for creative work. The programme is based mainly on guided research and a thesis which is evaluated by the internal and external examiners of the University of Ghana. As far as possible, field work is undertaken in the country of origin of the student as part of the research for the M.Phil degree. The course duration is a minimum of 12 months for those who already hold an M.A. degree in Population Studies.

c) Ph.D Degree Programme in Population Studies

Candidates with appropriate qualifications can also be admitted to courses of study which lead to the Doctor of Philosophy degree in Population Studies of the University of Ghana. Such courses of study are specifically designed to meet the needs of students who possess the aptitude to undertake creative and original work in any of the major fields of population studies. For those students who already hold a Masters degree in Population Studies, the duration of the course is at least 24 months.

d) Other courses

RIPS organises courses specially designed to meet the needs of professionals in the field at the request of governments and institutions in the English-speaking African countries.

10. Admission requirements

For the 12-month M.A. Degree Programme in Population Studies, the minimum requirement is a good Bachelor's degree (at least a second class/division) in the Natural, Social or Earth Sciences or any related subject.

The minimum requirement for the M.Phil degree in Population Studies is an M.A. degree or the Graduate Diploma in Population Studies or their equivalent.

In addition to the possession of a Master's or M.Phil degree in Population Studies, candidates for the Ph.D degree in Population Studies are expected to have some aptitude for creative work.

11. Fees

The fees currently paid to the University of Ghana, Legon are as follows:

	US$
Application fee	30.00
Tuition	-
Board and Lodging Hall	1,200.00
Registration	20.00
Medical Examination	30.00
JCR, SRC and Amalgamated Club Dues	5.00
Written Examinations	50.00

The above fees are subject to revision by the University of Ghana without notice.

12. Fellowships

About 45 United Nations Fellowships are available yearly. Candidates nominated by governments and accepted by the Institute will be awarded United Nations Fellowships for the period of study. Students stipends are paid in local currency and the level is determined by the United Nations in consultations with the United Nations Resident Representative in Ghana.

13. Living conditions

All students of the Institute board and lodge at the halls of residence of the University of Ghana, Legon and are therefore subject to the living conditions at the University of Ghana, Legon. However, the Institute may, in times of difficulty, make additional arrangements to ensure that students pursue their programme under reasonably comfortable living conditions.

14. Intake and output

The intake and output figures for the Institutes programmes are presented in Table 1 below for the period 1972 - 1986.

Table 1

Programme Year	Graduate Diploma in Population Studies		M.A. in Population Studies by Research		M.A. in Population Studies by Examination		M.Phil in Population Studies by thesis		Ph.D in Population Studies by thesis	
	Intake	Output	Intake	Output+	Intake	Output	Intake	Output	Intake	Output
1972/73	17	14	-	-	-	-	-	-	-	-
1973/74	14	13	3	0	-	-	-	-	-	-
1974/75	24	13	5	5	-	-	-	-	-	-
1975/76	24	22	[illegible]	8	-	-	-	-	-	-
1976/77	24	17	10	[illegible]	-	-	-	-	-	-
1977/78	24	21	10	6	-	-	-	-	1	-
1978/79	24	19	4	2	-	-	-	-	-	-
1979/80	22	16	10	3	-	-	-	-	-	-
1980/81	33	24	6	3	-	-	-	-	-	-
1981/82	37	20	11	4	-	-	-	-	-	-
1982/83	25	20	7	2	-	-	-	-	-	-
1983/84	24	15	6	-	-	-	-	-	-	-
1984/85	27	23	6*	1	-	-	6*	-	-	-
1985/86	-	-	-	2	44	35	5	-	3	-
1986/87	-	-	-	-	31	-	6	-	-	-

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*admitted for the M.A. programme by research but now registered for the M.Phil. programme by research.

+the numbers include those candidates whose results were published as well as those who passed but whose thesis were subject to revision before the results could be published.

Tables 2, 3 and 4 give the distribution of students admitted for courses at the Institute by country of origin and year of admission.

Table 2: Students admitted for the Graduate Diploma (1972-1984) and for the Master of Arts Programme by Examination (1985-1986) by country of origin

Country	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	TOTAL
Azania	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
Botswana	-	-	-	-	-	-	-	-	-	4	1	1	-	-	1	-	7
Cameroon	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Ethiopia	3	3	-	4	1	-	-	-	-	-	2	1	1	1	3	3	22
Gambia	-	-	1	-	-	1	-	1	2	-	-	-	-	-	2	-	7
Ghana	2	2	-	5	6	5	7	8	10	7	7	8	8	9	11	7	102
Kenya	-	-	2	1	1	1	1	3	3	1	2	3	1	-	3	2	24
Lesotho	-	1	-	-	-	-	-	-	-	2	-	-	-	-	1	-	4
Liberia	-	2	-	2	-	1	1	-	-	2	1	3	1	-	2	2	17
Lybia	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
Malawi	-	-	-	-	-	-	-	1	-	-	2	1	1	1	1	-	7
Mauritius	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2
Nigeria	2	2	5	1	3	2	1	-	-	2	2	-	4	8	9	8	49
Papua New Guinea	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	2
Sierra Leone	1	-	4	4	3	1	-	3	-	-	1	2	3	4	1	2	29
Somalia	-	1	1	-	-	-	-	1	1	3	1	-	2	1	2	-	13
Sudan	-	1	1	3	6	4	6	3	-	4	4	-	1	2	2	1	38
Swaziland	-	-	-	-	-	-	1	-	-	-	1	1	-	-	-	-	3
Tanzania	-	-	-	2	-	2	4	1	1	1	2	-	2	-	1	-	16
Uganda	-	3	-	1	3	4	2	3	4	2	2	1	-	-	3	3	31
Zambia	-	1	-	1	-	1	-	-	-	1	6	4	-	-	2	2	18
Zimbabwe	-	-	-	-	-	-	-	-	1	4	3	-	-	-	-	1	9
TOTAL	8	17	14	24	24	24	24	24	22	33	37	25	24	27	45	31	403

Table 3: M.A. and M.Phil degree by thesis. Students admitted 1973-1986 by country of origin

Country	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985*	1986*	Total
Cameroon	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Ethiopia	1	3	1	3	1	-	-	-	-	-	-	-	-	-	9
Gambia	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Ghana	-	-	-	2	4	2	5	5	5	1	6	5	5	1	41
Kenya	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Lesotho	-	-	-	-	-	-	-	-	1	1	-	-	-	-	2
Liberia	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Malawi	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Nigeria	1	-	1	-	1	-	-	-	-	1	-	-	1	2	7
Sierra Leone	1	-	4	1	1	-	-	-	-	-	1	1	-	2	11
Somalia	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Sudan	-	1	1	2	-	1	3	1	-	1	-	-	-	-	10
Swaziland	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Uganda	-	1	1	1	2	1	-	-	3	-	-	-	-	-	9
Zambia	-	-	-	1	-	-	-	-	-	1	-	-	-	-	2
West Germany	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
TOTAL	3	5	9	10	10	4	10	6	11	7	7	6	6	5	99

* Admissions for M.Phil by thesis

Table 4: Ph.D. Degree in Population Studies
Students admitted by year and country of origin

Country	1977	1979	1986
Ethiopia	1	-	-
Ghana	-	-	1
Nigeria	-	-	1
Sierra Leone	-	-	1
Uganda	-	1	-
TOTAL	1	1	3

20. Research Activities

Each Senior member of the teaching staff supported by Research Fellows and Research Assistants undertakes research projects in the region.

1. Country : Ghana

2. Name of the Centre: Department of Statistics, and
Institute of Statistical, Social and
Economic Research (ISSER)
University of Ghana

3. Attached to : University of Ghana

4. Address : Department of Statistics
University of Ghana
P.O. Box 115
Legon, Ghana

5. Names of the Directors : Professor S.I.K. Odoom
Head, Department of Statistics

Professor Kodwo Ewusi
Director, ISSER

6-7. Objectives and historical background

Profession-oriented statistical training in Ghana started in 1961, at the middle level, at the Achimota Statistical Training Centre near the University of Ghana. This was a UNDP - sponsored centre which offered courses leading to a certificate in statistics. The school was later absorbed by the Institute of Statistical, Social and Economic Research (ISSER) which was established in 1962 within the University of Ghana. ISSER offered a one-year training for the certificate and a further year's training for a Higher Certificate in Statistics was introduced in 1970/71 academic year. Subsequently the training programme at ISSER was expanded to include post-graduate instruction in statistics for graduates in other subject areas, mainly in the social sciences. In addition to the training programmes available at ISSER, other departments in the University offered specific courses in statistics at different levels to their students.

In 1972, the University of Ghana decided to set up a statistics unit to offer formal instruction in statistics at undergraduate level to co-ordinate the teaching of statistics in the University and to relieve ISSER, which had been set up primarily as a research establishment, from most of its teaching commitments.

The statistics unit was located within the department of Mathematics and ran programmes of undergraduate and graduate level courses as well as service courses for departments in the faculties of Science, Agriculture and Social Studies.

The programmes offered by the statistics unit have a substantial practical component, including a vacation training scheme under which students are attached to selected organizations in the government and private sectors to acquire practical experience in the kind of work they may have to do on graduation.

The first degree programme began in October 1973 with 38 students. Enrolment in the subsequent years quickly passed the 100 mark. Owing to this increase in student numbers and its attendant administrative problems, and the need to develop facilities for the co-ordination of statistical training within the University, the University of Ghana decided to turn the unit into a full Department of Statistics with effect from January 1978.

The facilities of the centre are available for the training of professional statisticians and middle level statistical personnel for government, for private industry and research institutions. It's training programmes is open to personnel from other African countries.

9. Academic staff

a) The teaching staff of the department of statistics consists of:

1 Associate Professor
1 Senior lecturer
4 lecturers
2 teaching assistants

b) The research staff at ISSER consist of:

1 Director (Professor)
1 Senior research fellow
9 Research fellows

9§10. Teaching programmes and admission requirements

The Department of Statistics offers programmes leading to a Bachelor's degree (B.A. or B.Sc.) and a graduate programme leading to M.Sc. in Statistics.

a) The B.A., B.Sc. degree programmes in statistics

The bachelor's degree programme in statistics is designed primarily to train candidates to take up careers as professional statisticians. In addition there are courses for students whose major interests are in subject areas other than statistics, mainly the social sciences, biology and agriculture.

Undergraduate degree programmes of the University of Ghana have to conform to certain general requirements:

In the first year each student is required to study three subjects, spending his time equally among these three. In the second year the course of study must cover two subjects but a student may spend more time on one than the other. In the third and final year of the degree programme, a student may spend all his time in one subject to acquire some degree of specialisation, or he may continue his study of two subjects towards a combined major degree.

Within this framework the department of statistics recommends the following combinations of subjects and courses to its undergraduates:

Year 1 : Statistics, Economics, Mathematics
Statistics, Computer Science, Mathematics

Year 2 : Statistics, Economics
Statistics, Mathematics
Statistics, Computer Science

Year 3 : Single subject major in Statistics or a combined major in statistics and the other subject studied in Year 2.

The combinations recommended above are not the only areas possible. Various other combinations are allowed.

The approximate amounts of teaching time devoted to statistics in each year, and the proportion this forms of total teaching time are as follows:

Year 1 : 7 hours a week for 25 weeks = 175 hours (1/3 of total teaching time)

Year 2 : 7-10 hours a week for 25 weeks = 175-250 hours (1/3 to 1/2 of total teaching time)

Year 3 : (i) Double major : 6-9 hours a week for 25 weeks = 150-225 hours 40-60% of total teaching time.

(ii) Single major : 15 hours a week for 25 weeks = 300 hours, 100% of total teaching time.

- Teaching Programme

FIRST YEAR

	Course	Pre-Requisite	Units
S100 :	Elementary Statistical Methods	O-Level Mathematics	12
S101 :	Introductory Probability	A-Level Mathematics	12
MS001 :	Basic Algebra and Calculus	O-Level Mathematics	12
S102 :	Sources and Methods of Official Statistics	*	*
S110 :	Basic Programming	*	*
S111 :	Analysis of data	*	*

* Prerequisites and number of units not specified by the centre.

SECOND YEAR

Course		Pre-Requisite	Units
S200 :	Statistical Methods	S100, S101/M101	12
S201 :	Probability Theory	S101/M101	12
S202 :	Sample Survey Methods	S100, S101	6
S203 :	Design of Experiments I	S100	6
S204 :	Population Statistics	*	*
S210 :	Statistical Computing	*	*
S211 :	Analysis of Data	*	*

* Prerequisites and number of units not specified by the centre.

THIRD YEAR

S300 :	Statistical Inference	S201	14
S301 :	Applied Stochastic Processes	S201	14
S302 :	Sampling Theory	S202	7
S303 :	Design of Experiments II	S203	7
S304 :	Non-parametric Statistics	S200	7
S305 :	Regression Analysis	S200, M201	7
S306 :	Multivariate Methods	S200, S201, M201	7
S310 :	Project		14

Course Combinations

(a) Single Subject : S300, S310 plus 42-45 units of other courses

(b) Double Major: (i) 28 or 30 units of courses (S300 to S306)
(ii) S310 or project in other subject

- Examinations

University examinations are held at the end of each year of the undergraduate programme. The award of a degree is based on the examinations at the end of the second and third years and on class work and class tests given in these two years.

- Admission Requirements

The minimum requirements for admission to degree courses at the University of Ghana are:

Passes in five subjects at the General Certificate of Education (G.C.E.) or its equivalent, of which three subjects must be passed at Advanced Level or its equivalent.

For Statistics, a pass in Mathematics at GCE Advanced Level or its equivalent, is desirable. A pass in Mathematics at ordinary level is required.

(b) The M.Sc. Programme in Statistics

- Entry Requirements

A good first degree and a good mathematical background. Normally a second class upper degree and at least two years of University mathematics are required but each application is considered on its merits.

- Teaching Programme

The programme extends over two years and consists of courses of lectures with written examinations, participation in seminars and supervised individual projects involving practical data analysis or the study of some aspect of theoretical statistics. A dissertation must be submitted on the project.

Courses

S400 : Statistical Theory (3 hours a week for 2 terms)
S401 : Probability Theory "
S402 : Stochastic Processes "
S403 : Linear Statistical Models "
S404 : Non-Parametric Statistics "
S405 : Multivariate Analysis "
S406 : Analysis of Discrete Data "
S407 : Introduction to Biostatistics
S410 : Seminars (one 2-hour session a week)

Course Combinations

First Year : S400, 401 and 402

Second Year : (i) Two courses selected with the approval of the department
(ii) S410 and Project

Each student is expected to give a presentation in S410 on the subject of his project.

- Examinations

First Year : Three 3-hour written papers

Second Year : Two 3-hour written papers and a dissertation on the project.

The Institute of Statistical, Social and Economic Research (ISSER) offers programmes leading to the one year certificate course in statistics and one year Diploma course in statistics.

(c) The certificate course in statistics

- Entry requirements

Candidates for admission must have passed either the West African School Certificate Examination with credits in English and mathematics or the GCE "O" level with passes in English and mathematics. A candidate who is deficient in these qualifications can also be admitted if he has (i) at least two years' practical experience in a statistical office, (ii) is sponsored by a Government or other organisation and (iii) passes an entrance examination in English and mathematics conducted by the Institute.

- Teaching programme

Four written papers are required namely:

(i) Mathematics
(ii) Statistical methods and organisation
(iii) Demography and economic statistics
(iv) Elements of economics and national accounts

In addition, the student undertakes:

Laboratory work and project work based on a survey on socio-economic problems.

(d) The diploma course in statistics

- Entry requirements

The minimum qualification for admission is a good pass in the certificate course in statistics or an approved equivalent. The course is meant to provide additional year's training in statistics for more capable middle level staff (who generally do not satisfy the normal university entrance requirements for a degree course in statistics). This course would enable them to undertake responsibilities at a junior professional level hence filling the gap between sub-professional and professional level personnel in statistical offices.

- Teaching programme

The course consists of three compulsory papers:

(i) Data processing and computer programming
(ii) Introduction to theoretical statistics
(iii) Censuses and sample surveys

One optional paper from the following:

(i) Design and analysis of experiments
(ii) Social accounting
(iii) Economic statistics
(iv) Demography

11. Fees

The schedule of fees of the University of Ghana as of October 1986 are as follows:

Non-Degree (Foreign) - DIPLOMA/CERTIFICATE COURSES

	¢
Application Fee	30.00
Tuition	400.00
Board & Lodging in a Hall	1,200.00
Registration	20.00
Medical Examination	30.00
J.C.R., S.R.C. & Amalgamated Club's Dues	5.00
Allowance for out-of-pocket expenses	1,300.00
Examination Fee: 1st Year	25.00
2nd Year	30.00

First degree (Foreign)

Application Fee	30.00
Tuition	1,300.00
Board & Lodging in a hall	1,200.00
Registration	20.00
Medical Examination	30.00
J.C.R., S.R.C. & Amalgamated Club's Dues	5.00
Allowance for out-of-pocket expenses	1,300.00
Examination Fee: 1st Year	25.00

Graduate fees (Foreign)

Application Fee	30.00
Tuition	2,500.00
Board & Lodging in a hall	1,200.00
Registration	20.00
Medical Examination	30.00
J.C.R., S.R.C. & Amalgamated Club's Dues	5.00
Allowance for out-of-pocket expenses	1,300.00
Written Examination	50.00

Occassional Student (Foreign)	$100
Affiliate Student (Foreign)	$110

Note: The above fees are subject to revision by the University without notice.

12. Fellowships

-

13. Living conditions

Nearly all students live in five Halls of residence on campus - three male Halls, one female Hall, and one mixed. Catering and cafeteria facilities are available on campus. However, any student who wishes to make his own arrangements for accommodation and/or meals is allowed to do so.

The city of Accra is only about 12 kilometres from Legon, the site of the University. Most other things that a student may need can be found in the shops in Accra. There is a regular public transport service between Legon and Accra.

14. Intake and output

The intake and output of the Department of Statistics, University of Ghana, Legon and the Institute of Statistical, Social and Economic Research (ISSER) is as follows:

Programme Year	B.A/B.Sc. degree in statistics						M.Sc., Graduate Diploma		Certificate (ISSER)		Diploma (ISSER)	
	1st. year		2nd. year		3rd. year							
	In-take	Out-put (P)	In-take	Out-put (P)	In-take	Out-put (P)	In-take	Out-put (P)	In-take	Out-put (P)	In-take	Out-put (P)
1976/77	100	79	36	13	25	23	-	-	25	22	19	18
1977/78	105	102	67	56	31	29	3	2	24	22	25	22
1978/79	93	61	83	62	36	26	3	0	21	21	22	22
1979/80	115	75	56	39	29	25	-	-	26	25	20	20
1980/81	65	44	71	26	29	28	2	1	17	17	26	26
1981/82	37	26	61	41	31	26	-	-	21	17	17	16
1982/83	61	57	24	23	39	36	-	-	32	32	17	17
1984/85	69	69	42	34	22	22	-	-	28	28	30	30
1985/86	72	51	69	59	36	28	-	-	28	24	30	26
1986/87	71		45		31		4		32		30	

P = passes

No intake in 1983/84 because University was closed down for ten months, May 1983 - March 1984.

15. Research activities and Consultancy/Advisory Services

The Department has undertaken a "Health Statistics Project". The centre for Health Statistics at Korle-Bu Hospital in Accra has a vast amount of unpublished data on death from various causes, including deaths from major diseases that prevail in Ghana. The data cover the whole country from 1967 to the present time. The objective of the project is, specifically to estimate:

(a) The comparative (crude) risks of illness and death from specific causes;

(b) The net risks resulting from the elimination or control of specific causes;

(c) The effect on life-expectancy of the elimination, or control of specific causes.

These parameters will be studied for the Ghanian population as a whole and also for various important sections of the population.

1. Country : Lesotho

2. Name of the Centre: Department of Statistics

3. Attached to : National University of Lesotho

4. Address : P.O. Roma 180
Lesotho
Southern Africa

Cable address: UNITER, Roma, Lesotho
Telex: 4303 LO
Telephone: Roma 64601

5. Name of the Director : Prof. J. Prasad

6. Objectives

The Department of Statistics trains personnel intending to serve government, parastatals and industry at certificate and undergraduate degree levels leading to a certificate in statistics and BA/BSc degree respectively.

7. Brief historical background

The department was established in 1973 as a constituent of the Faculty of Social Sciences when the combined University of Botswana, Lesotho and Swaziland (UBLS) statistical project began receiving assistance from UNDP/UNESCO. Since 1976, a separate programme has been offered by the Department of Statistics, National University of Lesotho. This followed the dissolution of UBLS. UNDP/UNESCO assistance has also been phased out. A Demographic Training Unit was planned to start in February 1983 and was to be financed by the UNFPA for a period of two years, and the University would then take over the running of the unit.

8. Academic staff

The staff comprise four nationals at the lecturer's level and one expatriate professor. The four nationals have all completed their M.Sc. or M. maths degrees from Canadian, U.K. and United States Universities. There is also a UNFPA sponsored staff member attached to the Demographic Unit including one local lecturer.

9&10 Teaching programmes & admission requirements

The Department of Statistics is hoping to implement a joint Hon's programme with mathematics during 1987/88. The Diploma programme has been suspended for the moment and only the certificate and degree programmes exist.

(a) Certificate in statistics

i) Duration: two years

ii) Entrance requirements: The normal entrance requirement for the certifica programme in statistics is the Cambridge Overseas School Certificate or its equivalent. A pass in mathematics is desirable. Nature age entry qualifications apply for students aged 19 or above provided he or she possesses suitable knowledge, skill or aptitude. This ability will be determined by a committee of Government and University representative

iii) Number of places in 1984/85: -
1985/86: -

iv) Courses

First year English
M103-4 Mathematics
M101-2 Mathematics

ST102	Elementary Statistics and Probability
ST201-3	Introductory Statistics I
ST201-1	Official Statistics
CS201	Introduction to Computer Science
ST202-3	Introductory Statistics II
ST204-4	Introductory Probability
ST208-2	Computer Programming
ST404-3	Demography

Note: Students intending to major in statistics are advised to take ST102 (statistics) and either M103-4 or M101-2 (Mathematics).

v) Assessment: Candidates who are able to obtain an over-all weighted grade of 40 per cent in year 1 are allowed to continue to year 2. Candidates who in year 2 are able to obtain a over-all weighted grade of 45 per cent are awarded the certificate in statistics.

(b) Degree Programme (Bachelor of Arts: Stats. single and double major)

i) Duration : 4 years

ii) Entrance requirements

The normal basic requirement to the Degree programme (B.A. Stat. single and double major) courses shall be a Cambridge Overseas School Certificate (COSC) in the 1st. or 2nd. Division with a credit in English language. Recognized alternative qualifications shall be a general Certificate of Education provided that the candidate:

- Has taken examination at 'O' level in at least six subjects taken over not more than two sittings.

- Has passed at O level in at least four subjects including English.

- Has a grade aggregate for six subjects not exceeding 34.

iii) Number of places offered in 1984/85: -
1985/86: -

iv) Courses

In the first year, students will normally be registered jointly in the Faculty of Social Science and in the Faculty of Humanities and follow a Common First Year Programme of study arranged jointly by both faculties.

Common first year for humanities and social science

- 12 units of communication skills
- 6 units of African studies
- 6-10 units of mathematics/statistics

After having successfully completed the common first year programme, BA/B.Sc. students can proceed to a double major programme in statistics. A single major programme does not exist in the strict sense of the term. The popular double major combinations are (i) Math/Stat (ii) Econ/Stat, (iii) Biology-chemistry/Stat and Chemistry/Geography/Stats.

The list of courses is as follows:

1.	ST102-3B	Elementary statistics and Probability
2.	ST200-2B	Basic data collection techniques and official statistics (for certificate students)
3.	ST201-6AB	Descriptive statistics, Elementary Probability and inference
4.	ST205-4AB	Basic Data Collection and Presentation, and Official Statistics
5.	ST209-4A	Introduction to Probability Theory
6.	ST210-4A	Introduction to Statistical Distribution and Inference
7.	ST212-3B	Introduction to Quantitative Techniques
8.	ST220-3AB	Project (Practicals) for Certificate in Statistics
9.	ST221-4B	Elementary Demography
10.	ST301-4B	Foundations of Probability theory and its Applications
11.	ST302-4B	Inference and hypothesis testing
12.	ST303-4A	Applied Statistical Methods I
13.	ST304-4B	Applied Statistical Methods II
14.	ST305-5AB	Sampling Theory
15.	ST306-4A	Introduction to OR
16.	ST307-3A	National Accounts (Likely to be discontinued)
17.	ST308-3B	Time-series Analysis and Forecasting
18.	ST309-3B	Analysis of variance and Linear Models
19.	ST310-3B	Non-parametric Statistics and Robustness
20.	ST401-4B	Theory and Practice of OR

21. ST402-3B Design and planning of Experiments
22. ST403-4A Introduction to Population Studies
23. ST404-3B Demographic Methods
24. ST405-3A Spatial Processes
25. ST408-3B Statistical Methods for Industry
26. ST420-4AB Project for statistics major
27. ST410-6AB Project for those specializing in Demography

v) Degree requirements:

Core courses for statistics exist under two schemes (i) and (ii) as follows:

Under scheme (i) ST205-4 (or ST201-3A + ST200-2)
ST209-4, ST210-4, ST301-4, ST302-4
ST305-5, ST306-4, ST309-3, ST420-4

Under scheme (ii) ST205-4 (or ST201-3A+ST200-2), ST209-4, ST210-4
ST303-4, ST304-4, ST305-5, ST306-4, ST309-3, ST420/410/416

All courses are designed to have a strong practical application and the primary intention is to provide students with tools of quantitative analysis that have general applicability to other subjects studied at the University.

vi) Course assessment: All the students enrolled in the Department of Statistics have to sit for written exams at the end of each semester.

Performance in a course shall be assessed on a numerical scale ranging from 0 to 100, and published course grades shall be on a six point letter scale according to the following equivalent:

A = 80 and above means Outstanding
B = 70-79 means Very Good
C = 60-69 " Good
D = 50-59 " Pass
E = 40-49 Fail (supplementable)

At the end of each academic year, provided a student has not repeated a year, his/her over-all weighted mean (OWM) shall be the best possible weighted average computed from all core courses. Then comes the following situation:

- Pass mark : O.W.M. of at least 50
- Repetition : O.W.M. from 40 to 49
- Discontinuation: O.W.M. below 40 or falling into repeating category a second time.

vii) Awards: At the end of Year IV a student shall be awarded a B.A. (Stats.) degree if and only if he/she has an O.W.M. of at least 50.

viii) Application for entry: Sets of application forms are obtained from and returned to: The Admissions Secretary, National University of Lesotho, P.O. Roma, Lesotho. Fee for 1R for national and 5R for others. Forms should be returned within 30 days and not later than 1st. April.

11. Fees

Tuition fees are as follows:

Citizens of Lesotho : 700 md
Others : 3,500 md

12. Fellowships

The majority of non-nationals enter this institution as a result of United Nations fellowships given to refugees. The quota is about 20 per cent of the student population (which is approximately 800), fellowships are not usually given specially for study in a particular area. The students indicate their preference in their second year.

13. Living conditions

Most of the full-time students live in residence and the University is vigorously expanding present facilities.

14. Intake and output

Student Enrolment in Statistics for the Academic Years 84/85 and 85/86

	1984/85	1985/86
ST102	115	111
ST200	8	3
ST112	112	98
ST202	105	86
ST205	10	4
ST209	50	25
ST210	26	17
ST212	37	43
ST220	5	2
ST221	-	3
ST301	6	7
ST302	2	3
ST303	9	8
ST304	4	7
ST305	7	7
ST306	17	24

	1984/85	1985/86
ST307	8	30
ST308	8	6
ST309	6	6
ST310	3	2
ST401	4	4
ST402	3	3
ST403	10	10
ST404	12	7
ST405	-	3
ST408	-	3
ST410	-	1
ST420	-	-

1. Country : Nigeria

2. Name of the Centre: Department of Statistics

3. Attached to : University of Ibadan

4. Address : Department of Statistics
University of Ibadan
Nigeria

5. Name of the Director : Prof. Biyi Afonja

6-7. Objectives and historical background

The Department was established by Senate in 1965 but did not function as an independent unit until 1973. Prior to 1973, the training of prospective statisticians was largely limited to the Departments of Mathematics and Economics. When a two-year course in statistics leading to a Professional Diploma in Statistics was established in 1965, to meet the urgent need for trained middle level professional statisticians, it was housed in the Department of Economics.

The initial primary emphasis of the Department of Statistics has been on the production of statisticians to reduce the critical manpower shortage and the offering of service courses to other teaching or research units of the University. The first degree programme is such as to maintain a judicious balance between theory and practice. The graduates have either found employment in various arms of government, the Universities and the private sector or are pursuing postgraduate studies.

In 1977, higher degree programmes were introduced with an initial intake of four students for the one-year M.Sc. The first M.Sc. graduates finished in October 1978.

In continuation of its efforts to combat the manpower problem and in order to offer further training opportunities for working statisticians, a Postgraduate Diploma in Statistics was initiated. The programme started with six students in 1978 with financial support from the Federal Office of Statistics on a crash training basis.

In October 1981, the Department took full control and housing of the Professional Diploma in Statistics which was previously housed in the Department of Economics since its establishment.

The Department produced its first Ph.D graduate in 1984.

Apart from the above, the Department has been running short courses, on a regular basis, during the months of August and September since 1978/79 session. These courses are:

Course A - Sample Survey Methods and Problems

Course B - Remedial/Refresher Course in Statistics

The number of participants at these courses has been the following:

Course	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
A	10	17	15	-	-	-
B	25	21	10	-	-	-

In August 1984, a special summer course in Statistics was run in the Department, specifically for Nigerian National Petroleum Corporation staff.

The Department also undertakes consulting work for those requiring statistical advice both from within and from outside the University. This is being organised under a unit of the Department known as Statistical Laboratory.

8. Academic staff

The Academic staff is composed of the following full-time members.

2 Professors
2 Senior Lecturers
4 Lecturers
1 Research Fellow
4 Assistant Lecturers (financed by Federal Office of Statistics)

In addition, the Department had the service of a consultant sponsored by ECA, under the auspices of the Statistical Training Programme for Africa (STPA) for six months.

9-10 Teaching programmes and admission requirements

All teaching programmes are organised under the University semester system and courses are evaluated in terms of semester course units. A semester course unit is defined as one lecture/tutorial contact hour per week, or one three-hour laboratory or practical class per week throughout a semester teaching period (a period of fifteen weeks) or an equivalent amount of other assigned study or practical experience or any combination of these. The courses are graded in levels. A compulsory course is one that must be taken and passed, a required course must be taken but not necessarily passed while an elective course is taken in order to get enough units for the degree or diploma. All the courses offered in the Department for various programmes are listed below.

A. Professional Diploma in Statistics

Courses under this programme are still under the old course system:

i) Duration: 2 years

ii) Eligibility for Admission:

Candidates for admission to the course are selected from amongst those who hold:

The West African School Certificate with passes at credit standard or the General Certificate of Education with passes at ordinary level in English Language, Mathematics and three other subjects - four other subjects if English Language is only a pass and not a credit. The Certificate of the Statistics Training Course of the Federal Office of Statistics Training School or its equivalent. Other candidates suitably recommended may be permitted to qualify for selection by taking the concessional entrance examination.

iii) Output since 1977:

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Output	12	26	16	20	22	24	14	24

1984/85	1985/86	1986/87	
22	25	34	(registration for final year)

iv) Regulations:

- Minimum requirements for the Diploma

100 Level Courses

Statistics: Compulsory Courses: STA 111, 121, 131, 161, 162 (9 units)

Mathematics: At least 5 units must be passed from MAT 113, 123, 141

Economics: At least 4 units must be passed from ECO 111, 112, 121

Computer Science: At least 2 units must be passed from CSC 130, 140

200 Level Courses

Statistics: Compulsory Course: STA 214, 222, 232, 261, 262, 291, 292 (13 units)

Required Courses: At least 5 units selected from STA 233, 234, 241, 170 must be passed

There are other courses in Statistics, Mathematics, Computer Science and others from which to supplement to get adequate number of units for the Diploma.

Total number of units that can be registered for per semester is 14 or 28 per session.

- Awards:

To qualify for the award of a diploma, a candidate must be credited with a minimum of 20 units at each level. All Courses are graded out of a maximum of 100 and the pass mark shall be 40. The Diploma is awarded either as pass or with distinction. A candidate will be awarded a distinction provided he obtains average mark of 70% or above in the best courses, including compulsory ones, totalling 24 units of 200 level courses. Minimum average mark for a pass is 40%. The average mark is a weighted average mark - each mark is weighted by its units.

B. B.Sc. Programme

i) Duration: 4 years (introduced during the 1986/87 session to replace the former 3 year programme).

ii) Eligibility for admission

(a) Joint Admission Marticulation Board (JAMB) Entrance Examination:

Applicants who take the Joint Matriculation Examination may be admitted to a degree course in Statistics provided that:

i) They reach the appropriate standard in the examination for entry to the course.

ii) Possess the School Certificate or General Certificate of Education Ordinary level or its equivalent with passes at credit level in at least five subjects obtained at not more than two sittings. The five subjects should include English language and Mathematics and two other science subjects.

(b) i) For direct entry in addition to the general University regulation, candidates for single honours in statistics must pass Mathematics and at least one other subject from the University approved list at G.C.E. Advanced level or its equivalent.

Or

ii) Candidates must be holders of the University of Ibadan Professional Diploma in Statistics who hold minimum admission requirements for first year (of the 4 - year programme) course of the University of Ibadan.

Candidates admitted by (b) join at the second year level while those admitted by (a) join at the first year level of the 4-year programme.

iii) Output since 1976

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
Output	7	11	13	8	30	15	5	6

	1983/84	1984/85	1985/86	1986/87
	9	9	9	22 (registration for final year)

iv) Regulations

Minimum degree requirements:

1. 100 Level		
Statistics:	Required STA 141 (3)	3 units
Mathematics:	Required MAT 111 (3), MAT 121, MAT 141 (3)	9 "
Computer Science:	Required CSC 101 (3)	3 "
Any subject Area (6)		6 "
2. 200 Level		
Statistics		
Compulsory:	STA 244 (2) STA 245 (2)	4 "
Required:	STA 256 (2) STA 271 (3)	5 "
Mathematics		
Required:	MAT 211 (2) MAT 212 (2) MAT 221 (2) MAT 222(2)	4 "
Computer Science		
Required:	CSC 231 (3)	3 "
Elective:	CSC 291 (3) CSC 233 (3)	6 "
Economics		
Required:	ECO 201 (2) ECO 202 (2)	4 "
3. 300 Level		
Statistics		
Compulsory:	STA 341 (2) STA 342 (2) STA 343 (2)	6 "
Required:	STA 351 (2) STA 352 (2) STA 353 (2) STA 356 (2) STA 371 (3)	11 "
Mathematics		
Required:	MAT 341 (3), MAT 342 (3) MAT 351 (3)	9 "
Elective:	MAT 356 (3)	
Computer Science		
Elective:	CSC 302 (3)	3 "
4. 400 Level		
Statistics		
Compulsory:	STA 401 (4) STA 442 (2) STA 443 (2)	8 "
Required:	STA 441 (2) STA 451 (2) STA 452 (2) STA 453 (2) STA 471 (3)	11 "
	At least 5 units must be passed	

Elective: STA 461 (2) STA 462 (2) STA 463 (2)
STA 464 (2) STA 465 (2) STA 466 (2)
STA 481 (2) STA 482 (2) STA 483 (2)
STA 484 (2) 20 Units

Mathematics

Elective: MAT 417 (3) MAT 413 (3) 6 "

Computer Science

Elective: CSC 471 (2) CSC 472 (3) CSC 432 (3) 8 "

There are other subjects/courses in Statistics, Mathematics, Computer Science & others at different levels from which to supplement to get the necessary units for the degree.

Total number of course units that can be registered for per semester is 14 or 28 per session.

- Awards

The class of the degree shall be awarded on the basis of the final grade point average as follows:

6.2 and above	1st. Class Honours
4.8 - 6.1	2nd. Class Honours Upper Division
2.9 - 4.7	2nd. Class Honours Lower Division
1.7 - 2.8	3rd. Class Honours
1.0 - 1.6	Pass

To qualify for the award of a degree, a student must pass 60 units at least 40 of which shall be at the 200 and 300 levels and a minimum of 15 and a maximum of 20 at 100 level.

C. Postgraduate Diploma in Statistics

i) Duration: One academic session

ii) Eligibility for admission:

Candidates for admission to the programme shall normally be holders of the degree of Bachelor with some knowledge of Mathematics not below the level of the General Certificate of Education at Advanced level or its equivalent.

iii) Intake and Output since 1979

	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
Output	3	6	7	8	4	4	5

1985/86	1986/87
4	Intake: 4

iv) Regulations

- Minimum requirement for the Diploma:

Candidates admitted for the course shall be required to take and pass:

STA 701 (4) STA 711 (3) STA 713 (3) STA 750 (3)   13 units
Six units selected from STA 721 (3) STA 722 (3)
STA 723 (3) STA 724 (3) STA 725 (3)

To qualify for the award of the Diploma, a candidate must be credited with a minimum of 22 units

- Awards

The Diploma will be awarded with distinction to a candidate who attains an average score of 70% or above in the examination. Minimum average score for a pass is 40%.

D. M.Sc. Programme

i) Duration: 1 year (12 months)

ii) Eligibility for Admission:

Candidates for admission to the programme shall normally be graduates of the University of Ibadan or of other Universities recognised by senate, who possess the degree of bachelor in Statistics or related disciplines. Candidates who possess approved postgraduate diploma in Statistics or any relevant qualification and/or experience may also be considered for admission.

Output:	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	85/86
	1	3	7	3	3	6	8	6	7

iii) Intake for 1986/87: 10

iv) Regulation:

Candidates admitted to the programme shall be required to take and pass:

STA 751 (4) STA 761 (3) STA 762 (3)   10 units
and least any two of STA 763 (3) STA 764 (3) STA 765 (3)
STA 766 (3) STA 767 (3) STA 768 (3) STA 769 (3) and
STA 770 (3) and a project which will be assigned a certain number of units.

To qualify for the award of the degree, a candidate must be credited with a minimum of 16 units.

E. M.Phil Programme

i) Admission to the programme shall be open to:

- Candidates who have attained a 50% level of pass in the course examinations for the M.Sc. degree programme in Statistics of the University of Ibadan, and made satisfactory progress in their projects.

- Candidates who possess a masters degree in Statistics, each case being considered on its merit.

ii) Candidates admitted to the programme may be required to take relevant courses on the advice of the Department.

iii) Areas of specialization shall be decided by candidates in consultation with the Head of Department and their supervisors.

iv) The degree shall be awarded on the basis of dissertation resulting from independent research.

F. Ph.D Programme

Admission to the programme shall be open to:

i) Candidates who have attained a 60% Level of pass in the course examinations for the M.Sc. degree programme in Statistics of the University of Ibadan, and made satisfactory progress in their projects.

ii) Candidates for the M.Phil degree programme of the University of Ibadan who have satisfied the course requirement for the degree and been permitted by senate to upgrade their registration on the basis of satisfactory progress in research.

iii) Candidates who possess the M.Phil degree or equivalent qualification in Statistics; each case being considered in its own merit.

Candidates admitted to the programme may be required to take relevant courses on the advice of the Department. Areas of specialization shall be decided by candidates in consultation with the Head of Department and their supervisors.

The degree shall be awarded on the basis of a thesis embodying original contribution to knowledge.

Output:	1983/84	1984/85	1985/86
	1	1	1

Current enrolment for M.Phil or Ph.D: 13

G. List of Courses

1 unit is equivalent to 15 lecture hours or 45 hours laboratory/practical work per semester.

100 - 400 Levels

STA 141:	Basic Statistics	3 units
STA 240:	General Applied Statistics I	2 "
STA 244:	Elementary Statistics I	2 "
STA 245:	Elementary Statistics II	2 "
STA 256:	Introduction to Socio-Economic Statistics	2
STA 271:	Statistical Computing I	3 "
STA 340:	General Applied Statistics II	2 "
STA 341:	Probability I	2 "
STA 342:	Distribution Theory I	2 "
STA 343:	Statistical Inference I	2 "
STA 351:	Statistical Methods	2 "
STA 352:	Sample Survey Design I	2 "
STA 353:	Experimental Design I	2 "
STA 356:	Socio-Economic Statistics	2 "
STA 361:	Statistical Quality Control	2 "
STA 362:	Introduction to Operations Research	2 "
STA 371:	Statistical Computing II	3 "
STA 441:	Introduction to Stochastic Process	2 "
STA 442:	Distribution Theory II	2 "
STA 443:	Statistical Inference II	2 "
STA 451:	Logical Background to Statistics and Decision Theory	2 "
STA 452:	Sample Survey Design II	2 "
STA 453:	Experimental Design II	2 "
STA 461:	Sequential Analysis	2 "
STA 462:	Non-parametric Methods	2 "
STA 463:	Multivariate Methods	2 "
STA 464:	Introduction to Time Series Analysis	2 "
STA 465:	Econometric Methods	2 "
STA 466:	Biometric Methods	2
STA 471:	Statistical Computing III	3 "
STA 481:	Demography	2 "
STA 482:	Introduction to Actuarial Statistics	2 "
STA 483:	Educational Statistics	2 "
STA 484:	Medical Statistics	2 "

700 Levels

STA 701:	Practical Project	4 "
STA 711:	Probability and Distribution Theory	3 "
STA 712:	Methods of Statistical Inference and Decision	3
STA 713:	Design and Analysis of Experiments and Surveys	3 "
STA 721:	Operations Research	3 "
STA 722:	Econometric Methods	3 "
STA 723:	Biometric Methods	3 "
STA 724:	Demographic Techniques	3 "

STA 725:	Multivariate - Analysis	3 units
STA 750:	Official Statistics	3 "
STA 751:	Practical Project	4 "
STA 761:	General Statistical Theory	3 "
STA 762:	Advanced Statistical Methods	3 "
STA 763:	Design and Analysis of Experiments	3 "
STA 764:	Design and Analysis of Sample Surveys	3 "
STA 765:	Time Series	
STA 766:	Mathematical Programming and Games Theory	3 "
STA 767:	Advanced Econometric Methods	3 "
STA 768:	Advanced Demographic Analysis	3 "
STA 769:	Advanced Biometric Methods	3 "
STA 770:	Topics in the Methodology of Official Statistics	3 "

Old Course System

STA 111:	Elementary Statistics I	2 "
STA 121:	Elementary Statistics II	2 "
STA 131:	Statistical Organisation	2 "
STA 161:	Statistical Practical I	1 unit
STA 162:	Statistical Practical II	1 "
STA 214:	Probability and Distribution Theory	2 units
STA 222:	Statistical Inference I	2 "
STA 231:	Statistical Quality Control	2 "
STA 232:	Introduction to Economic and Social Statistics	2 "
STA 234:	Experimental Design I	3 "
STA 241:	Regression Analysis	1 unit
STA 242:	Introduction to Non-parametric Methods	1 "
STA 243:	Introduction to Multivariate Methods	1 "
STA 251:	Introduction to Operations Research	2 units
STA 261:	Statistics Practical I	1 unit
STA 262:	Statistics Practical II	1 "
STA 270:	Introduction to Official Statistics	2 units
STA 291:	Assignment Essay	2 "
STA 292:	Practical Project	3 "

11. Fees

	Tuition ₦	Residence ₦	Students' Union ₦
1. Nigerian Students			
1st. Degree	-	90.00	10.00
Non-Degree Diploma	250.00	90.00	10.00
Postgraduate Diploma	500.00	90.00	10.00
M.Sc., M.Phil & Ph.D.	700.00	130.00	10.00

	Tuition ₦	Residence ₦	Students' Union ₦
2. Foreign Students			
1st. Degree	1000.00	90.00	10.00
Non-degree Diploma	1050.00	90.00	10.00
Postgraduate Diploma	1050.00	90.00	10.00
M.Sc., M.Phil & Ph.D	2000.00	130.00	10.00

Students may feed in the University cafeterias on the basis of pay-as-you-eat. A sum of ₦545.00, according to a Government directive is to be charged for feeding for a session or ₦4.50 a day for 3 meals.

Note: Because of inflation and other factors, it is advisable that the rate should be put at ₦6.00 per day for 3 meals in computing what to pay a sponsored scholar.

12. Fellowship

University scholarships exist for higher degree to the value of ₦1,000.00 per session for non-sponsored students. There are other overseas' schemes. All are centrally administered.

13. Living conditions

Most university students are accommodated in Halls of Residence but there is also 'off campus' arrangement. For the B.Sc. programme, it is compulsory for a student to stay 'off campus' in the 2nd year of the course except for some exceptional cases like sportsmen/women. Higher degree students are normally in resident while postgraduate diploma students are 'off campus'. The 'off campus' arrangement is usually adequate because of reasonable accommodation around the University campus.

14. Intake-output

See Table 1 for intake and output since 1975/76. Also see section 9-10.

20-21 Research activities/consultancy (Advisory) services

The staff of the Department engage in research of both national and international interest in various aspects of methodology and general applications. Apart from their teaching, research and consulting commitments, some have offered and are offering national and international service in various forms.

Table 1: Examination Results from 1976-1984

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
B.Sc.	7 (A)	13 (A)	10 (A)	8 (A)	32 (A)	5 (A)	5 (A)	6 (A)	9 (A)	10 (A)
Degree	7 passed	11 passed	3 (R)	3 (R)	3 (R)	10 (R)	4 (R)	2 (R)	2 (R)	
			13 passed	6 passed	30 passed	15 passed	5 passed	6 passed	9 passed	6 passed
M.Sc.			4 (A)	2 (A)	8 (A)	5 (A)	7 (A)	7 (A)	10 (A)	11 (A)
			1 passed	3 (R)	2 (R)	3 (R)	4 (A)	1 (R)	2 (R)	4 (R)
				3 passed	7 passed	3 passed	8 passed	6 passed	8 passed	6 passed
P.G.D.S.				6 (A)	7 (A)	13 (A)	7 (A)	5 (A)	5 (A)	3 (A)
				3 passed	6 passed	7 passed	4 (R)	1 (R)	1 (R)	
							9 passed	4 passed	4 passed	
P.D.S.								21 (A)	28 (A)	33 (A)
								14 passed	8 (R)	
									24 passed	

(A) : Admitted
(R) : Repeated

1. Country : Tanzania

2. Name of the Centre: Eastern Africa Statistical Training Centre (EASTC)

3. Attached to : University of Dar-es-Salaam

4. Address : P.O. Box 35103
Dar-es-Salaam
United Rep. of Tanzania

Telephone No. 48054 (direct)
48309

5. Name of the Director : Dr. P.P. Namfua (Acting)

6. Objectives

The Centre trains sub-professional personnel in statistical methods and techniques at certificate (middle) and diploma (intermediate) levels. Socio-economic surveys (field projects) are organized and conducted by the Centre in collaboration with government agencies or parastatals. The Centre may prepare, organize and advise on statistical seminars, workshops or conferences if called upon to do so by government agencies or parastatals. It does, on alternate years, conduct an 8 week course for serving personnel without prior statistical knowledge who nevertheness may be required to perform simple statistical assignments.

7. Brief historical background

The Eastern Africa Statistical Training Centre (known as the East African Statistical Training Centre before April 1978) was established in July 1965. The third session of the Conference of African Statisticians held in Addis Ababa (October 1963) requested the United Nations Economic Commission for Africa (ECA) to assist in the establishment of a statistical training centre for the East African sub-region. The birth of such a centre became a reality at a Nairobi meeting held in February 1964 between the East African Common Services Organization (later transformed into the East African Community) and the United Nations. The Centre was handed over to the East African Community in August 1972.

8. Academic staff

The permanent academic staff comprises two senior lecturers and four lecturers with an average of eight teaching hours per week. External lecturers are invited as and when need arises for about 300 hours in the year.

9&10 Teaching programmes and admission requirements

a) Certificate course (middle-level)

i) Duration: Ten months

ii) Eligibility for admission:

To qualify for admission to the Certificate course (middle-level) a candidate should:

- Hold the ordinary level Certificate of education as a minimum qualification with passes in mathematics and English. The course is pretty difficult for students with a poor mathematical background.

- Have at least a year's working experience in statistical assignments.

- Pass an entrance examination organized by the Centre in November each year.

iii) Number of places offered in 1984/85: 70

iv) Teaching programme

The Centre started functioning with the middle-level course in August 1965, and the first intermediate level course started in 1966. Both courses are of ten (10) months duration beginning in July and ending in April, the following year. The training programme in the Certificate (middle-level) course covers the following subjects.

- Statistical Theory	120 hours
- Applied Statistics	120 hours
- Mathematics	130 hours
- Economics	150 hours
- Practicals (Statistical computation and elements of accounting)	90 hours
- Field Project	100 hours

v) Awards: Successful students are awarded certificates.

vi) Examinations: There are two examinations held during the ten months course i.e. terminal examinations held at the end of November and final examinations held in April. To pass the Centre's examinations, a candidate has to score at least 50 per cent in each subject.

A candidate having passed each subject and having an average of at least 80 per cent is deemed to have passed with distinction.

b) Diploma course (Intermediate level)

i) Duration : Ten months

ii) Eligibility for admission

To qualify for admission a candidate should:

- Pass the Centre's certificate or other equivalent qualification e.g. a certificate of the Calcutta International Statistical Education Centre, a certificate of the Zambian in-service statistical training course or holders of the Stage I of the Institute of Statisticians.

- Pass the Centre's entrance examination.

iii) Number of places offered in 1980/81 : 30

iv) Teaching programme covers the following subjects:

- Statistics Theory	180 hours
- Applied Statistics	120 hours
- Economics	150 hours
- Mathematics	210 hours
- Practicals	90 hours
- Field Project (survey)	100 hours

v) Awards: Successful students are awarded Diplomas. Diplomas.

vi) Examinations: There are two examinations held during the ten months course i.e. terminal examination held at the beginning of November and final examination held in April. To pass the examination a candidate has to score at least 50 per cent in each subject. A candidate having passed each subject and having an average of at least 70 per cent is deemed to have passed with distinction.

c) Eight week short course

This course which is organised specifically for those middle or lower level statistical personnel whose duties involve the use of statistics but had no formal training in statistics, runs from mid-April to mid-June in alternate years. The programme consists of elementary statistical theory, applied statistics, mathematics, economics and practicals. Currently this has been confined to participants from the host country i.e. Tanzania, but arrangements can be made to hold a similar course in any other user country which indicates the need.

11&12 Fees and fellowships

Sponsoring governments or organisations are required to pay the fees which include all the costs of training. The amount of fees is worked out by the Advisory Board consisting of heads of statistical departments of all user countries. Currently the fees are US$5,650 per trainee excluding travel between the Centre and the student's home. Sponsoring governments or organizations may arrange to meet the fees through fellowships from external donors. Where fellowships are granted directly to the Centre, the Advisory Board in consultation with the donor decide on their distribution between countries. Amongst sponsors who have provided fellowships in the past are: CFTC, UNDP, World Bank, USAID, EEC and Federal Republic of Germany.

13. Living Conditions

Since its inception, the Centre has been accommodated at the main campus of the University of Dar-es-Salaam where it occupies four offices and two lecture rooms. The students are housed at the University's halls of residence and are free to utilize the University Library as well as other socio-cultural facilities. The objective is for the Centre to have its own independent premises.

14. Intake and output

Eastern Africa Statistical Training Centre intake and output figures for Certificate (Middle-level) and Diploma (Intermediate-level) 1977/78 to 1983/84.

Year	CERTIFICATE (MIDDLE-LEVEL) Intake	CERTIFICATE (MIDDLE-LEVEL) Output (Passes)	DIPLOMA (INTERMEDIATE-LEVEL) Intake	DIPLOMA (INTERMEDIATE-LEVEL) Output (Passes)
1977/78	22	22	16	16
1978/79	27	23	18	17
1979/80	64	32	29	21
1980/81	66	41	26	24
1981/82	60	35	32	24
1982/83	59	43	29	25
1983/84	62	--	30	--

Total enrolment at the EASTC 1977/85 by nationality

Nationality	Certificate (Middle-level)	Diploma (Intermediate-level)	Total
Kenyan	115	76	191
Tanzanian	173	57	230
Ugandan	62	29	91
Zambian	1	32	33
Sudanese	19	4	23
Zimbabwean	4	4	8
Ethiopian	3	2	5
Malawian	8	2	10
Seychelles	4	4	8
Namibian	8	1	9
Gambian	7	1	8
Botswana	1	-	1
Sierra Leone	-	1	1
TOTAL	405	213	618

16. Link with other Institutions

The Centre has as its external examiners for its certificate and diploma examinations: the Institute of Statisticians (U.K.) and the Institute of Statistics and Applied Economics, Makerere University in Uganda. It has a close working relationship with the in-service courses run by the Statistics Departments of Zambia and Zimbabwe. Graduates of these courses join the diploma course of the Centre. The Centre has also a close working relationship with Munich Centre and the University of Southampton, U.K.

1. Country : Uganda

2. Name of the Centre: Institute of Statistics and Applied Economics (ISAE)

3. Attached to : Makerere University

4. Address : P.O. Box 7062
Kampala, Uganda

Telephone: 55-95-31, 53-12-18 Kampala
Telegram: MAKUNIKA KAMPALA
Telex: 61162 STATIS

5. Name of the Director : Prof. Sam Tulya-Muhika

6. Objectives

The main purpose is to provide high level professional training to nationals of the English-speaking African countries. With this objective in view, a practical oriented undergraduate programme for the award of a B.Sc. degree in Statistics and Economics from Makerere University has been in continual evolution since 1969. From experience, it was realised that a new programme needed to be developed in order that the training offered at the Institute would meet the most immediate needs of the countries of the region. With this purpose in view, a highly professional oriented programme leading to the award of the Bachelor of Statistics Degree from Makerere University was introduced in July 1975.

The professional B.Sc. Programme, introduced in July 1969 was phased out in March 1977 and a new B.Sc. programme with relatively more theoretical bias, introduced in July 1975. In collaboration with the departments of Economics and Mathematics, the Institute made available a programme leading to B.Sc. degree in Economics and Statistics and Mathematics and Statistics respectively.

The Institute is carrying out programmes for postgraduate studies as part of its training activities. With this in mind, the Institute will be organizing a professional postgraduate nine-month programme leading to a Diploma in Statistics (Dip.Stat.) for re-training and training civil servants in the region. This has been in evolution since 1979 and started in 1985. Under this programme, successful candidates may opt to write a thesis after the Diploma course, and be eligible for the degree of Master of Statistics (M.Stat.) of Makerere University. Candidates will be able to specialize in any of the following areas:

(a) Economic Statistics
(b) National Accounts
(c) Agricultural Statistics
(d) Demography and Social Statistics
(e) Sampling Technology and Data Processing

for the Dip.Stat.

For the M.Stat. additional topics for specialisation will be:

(a) Econometrics
(b) Computer techniques
(c) Operations Research

7. Brief historical background

The Institute of Statistics and Applied Economics was established at Makerere University in July 1969 in accordance with the recommendations of a United Nations Experts Group on "The Education and Training of Statisticians in Africa", fielded in 1966.

The Institute is established as an autonomous institute within the legal framework of Makerere University. It has an Advisory Council which deals with policy guideliness for the operations of the Institute.

The membership of the Advisory Council of the Institute includes:

(a) Vice-Chancellor, Makerere University (Chairman)
(b) Permanent Secretary, Ministry of Planning and Economic Development, Government of Uganda
(c) Permanent Secretary, Ministry of Education, Government of Uganda
(d) Permanent Secretary, Ministry of Regional Co-operation, Government of Uganda
(e) Academic Registrar, Makerere University, Kampala
(f) Representative of the Government of Kenya
(g) Representative of the Government of Tanzania
(h) Representative of the Government of Zambia
(i) Chief Government Statistician, Government of Uganda
(j) Director, Eastern Africa Statistical Training Centre, Dar-es-Salaam
(k) Dean, Faculty of Science, Makerere University, Kampala
(l) Dean, Faculty of Social Sciences, Makerere University, Kampala
(m) Director, Institute of Statistics and Applied Economics, Makerere University, Kampala (Secretary)
(n) Technical Representative of the Executing Agency (UNDTCD) ex-officio
(o) Representative of UNDP, Kampala
(p) Representative of FAO
(q) Representative of UNESCO
(r) Representative of ECA
(s) The Project manager (or equivalent)
(t) Donor Agency Representatives (as applicable)

8. Academic staff

Training staff of the Institute are two-grouped. The Government of Uganda provides a Director and various (counterpart) professional and other staff. The United Nations, Agencies of the United Nations and various other multi-national agencies provide experts and consultants in various areas of specialization in statistics. Currently, the professional compliment is made up of 26 locally established posts (ranging from Lecturers to full Professors) and 8 international expert posts.

9&10 Teaching programmes and admission requirements

(a) Undergraduate professional (B.Stat.) programme

i) Duration: Three years

ii) Eligibility for admission

To qualify for admission to the programme, a candidate must qualify to enter the University.

- as an A-level candidate, minimum 2 good Principals, one of which must be a good Principal pass in Mathematics;

or

- must have obtained a good pass at Intermediate Professional level in Statistics;
- must have passed Part II of the Institute of Statisticians, London, or equivalent;

or

- must have successfully spent one year doing a post O-level programme at a University, doing a programme involving Mathematics;
- candidates who do not have any of the above qualifications will be required to take a Mature Age Entrance Examination of the University.

(Note: There are regulations in the University permitting suitable applicants to join the 2nd year of study).

iii) Number of places offered in 1984 : 55

iv) Regulations

- Candidates shall be required to sit and pass examination papers in each year of study as follows:

First year :	Six papers and one practical examination
Second year :	six papers and one practical examination

Third year : six papers and one practical examination

The pass mark shall be at least 40% for all examination papers.

- Progressive assessment shall contribute 33 1/3 percent to overall assessment in each of the second and third years of study. This shall be made up of all assessment other than examination papers. For the first year, progressive assessment shall contribute up to 33 1/3 percent (and not less than 25 percent) in each paper.

v) Teaching programme

The summary outline of the teaching programme to be taken will be as follows:

- First year (11 months duration)

Statistics : two papers
Economics : two papers
Mathematics : two papers
Practical Examination: one four-hour paper
French : Optional course (two hours)
Workshop : nine weeks during University long vacation

- Second year (11 months duration)

Statistics : three papers (3 hours for each examination paper)
Commerce : one paper (3 hours for the paper)
Economics : one paper (3 hours for the paper)
Mathematics : one paper (3 hours for the paper)
Practical Examination: one four-hour paper
Workshop : nine weeks during University long vacation

- Third year (9 months duration)

Statistics : five papers (3 hours for each Statistics paper)
Economics : one paper (3 hours for the paper)
Practical Examination: one four-hour paper
Individual Research Project : must be passed separately for the award of the B.Stat. degree

vi) Awards

- To be admitted to the final year written examination, a candidate shall present a written acceptable report of a piece of research he designed and carried out.

- The degree of B.Stat. shall be conferred upon a candidate who successfully completes the whole programme. The following classification of the degree shall prevail:

Over 70 percent : First class honours
60 to 69 percent: Upper second class honours
50 to 59 percent: Lower second class honours
40 to 49 percent: Pass
Below 40 percent: Fail

(b) Undergraduate B.Sc. programme

i) Duration : Three years

ii) Admission:

To be registered as a candidate for the degree of Bachelor of Science, the individual must satisfy the entrance requirements of the University, the special requirements of the Faculty of Science and of the courses which he wishes to follow.

iii) Qualifications:

To qualify for the award of the degree of Bachelor of Science, the candidate is required to be registered for the degree for a minimum of three academic years, to follow courses as specified below and to sit for and pass the prescribed examinations.

iv) Syllabuses

- First year

Statistics : two three-hour papers
Economics : two three-hour papers
Mathematics : two three-hour papers

- Second year

Statistics : three three-hour papers
Economics : two three-hour papers

- Third year

Statistics : two three-hour papers
Economics : two three-hour papers

(c) Diploma in Statistics (Dip.Stat) and Master of Statistics (M.Stat)

The nine-months long Dip.Stat. programme is a demanding undertaking designed for highly-motivated, mature persons who want to make their leave of absence from their position in their home country as productive as possible. The training is through classroom lectures, seminars, discussions, extensive laboratory work, emphasising practical aspects to a greater depth. The structure of this programme is such that it provides for compulsory or core courses and optional courses relating to the area of specialization.

In addition to the regulations laid down, each candidate for the Dip.Stat/M.Stat award must comply with relevant statutes of the University. Attention is drawn especially to University requirements or minimum residence and minimum as well as maximum period of registration which may be more extensive than indicated below.

The M.Stat programme can be taken as an immediate follow-up of the Dip.Stat programme or registered separately and is awarded on the basis of a thesis of an acceptable standard on an approved topic. After fulfilling the residential requirements, the candidate may return to his national Bureau of Statistics or other office to write up his M.Stat thesis.

Written examination for the Dip.Stat shall be taken in all papers at the end of the academic year or soon after.

Regulations

To be considered for admission to the Dip.Stat/M.Stat programme, the applicant must have as a minimum requirement:

- Have obtained a first degree in Statistics combined with Economics or Mathematics or an allied subject or equivalent professional training (e.g. B. Stat. M.I.S.)

- Have obtained at least a second class lower degree or equivalent in the relevant training.

- Preferably have worked in professional applied work for at least two years after graduation with any degree of at least lower second class or equivalent.

The duration of the Dip.Stat programme will be one academic year of nine months. Candidates shall be required to sit and pass examination papers at the end of the courses as follows:

- Three compulsory subjects (one three-hour paper in each paper)

  Statistical Methods
  Design of Sample Surveys
  Computer Methods for Statistical Analysis

- One optional subject (2 papers, each 3 hours duration)

  National Accounts
  Demography and Social Statistics
  Economic Statistics
  Agricultural Statistics
  Sampling Technology }
  Advanced Computer Techniques } one option

- One practical paper in the optional subject and one in the compulsory papers. Duration of each paper will be four hours.

The candidate shall be required to pass each compulsory subject individually and pass the optional subject on the aggregate. The pass marks shall be 50 percent. Progressive Assessment shall contribute 33 1/3 percent to overall assessment at the end of the course.

Candidates who fail any subjects in their examination shall be referred in the subjects after a period of about three months.

All candidates who satisfactorily complete the Dip.Stat programme will qualify for the award of the Dip.Stat.

Candidates wishing to join M.Stat programme are required to have obtained an overall good pass in the Dip.Stat examination or equivalent.

Candidates wishing to do M.Stat programme after the post-graduate Diploma in statistics will be required to submit a thesis of acceptable standard on an approved topic, not earlier than 15 months from the date of registering for the M.Stat programme. The first six months of the M.Stat shall include further work.

11. Fees

		US$	
	B.Stat	Dip.Stat	M.Stat
Enrolment	62.50	62.00	62.00
Tuition	4,000.00	5,275.00	5,275.00
Accommodation (Univ. terms)	3,200.00	2,400.00	2,400.00

N.B. This excludes some other minor expenses. A full financial schedule is available on application to the Institute.

12. Fellowships

Lack of fellowships is one aspect that often makes it difficult to implement regional training programmes. The following seem to be possible ways of raising fellowships to send students to this Institute.

(a) At the second session of the Joint Conference of African Planners, Statisticians and Demographers, the EEC representative indicated that the problem of fellowships should be solved within the framework of the multi-year training programme which the Commission of the European Communities has established with each ACP State at the request of and according to the priorities determined by the countries concerned. It is advisable that the ACP States reserve an adequate share of this programme for statistical training.

EEC would be willing to consider, within the framework of STPA, applications for fellowships from the individual countries concerned. The EEC Delegate in the user country could brief prospective candidates on how to go about this.

(b) If the user country is a member of the Commonwealth of Nations, it could also apply to the Overseas Development Administration (ODA), U.K., for a fellowship from the Third World Fund. The Fund is meant to assist candidates from Third World commonwealth countries. The Commonwealth Fund for Technical Co-operation also provides fellowships for study in statistics. Correspondence on this matter should be sent to:

The Special Adviser in Statistics
Commonwealth Fund for Technical Co-operation
Marlborough House
Pall Mall
London SW1 5HX
England

13. Living conditions

University students are accommodated on the University campus in the University Halls of Residence.

14. Intake and output

Programme	B.Stat						B.Sc. Stat					
	1st. year		2nd. year		3rd. year		1st. year		2nd. year		3rd. year	
Year	E	P	E	P	E	P	E	P	E	P	E	P
1976/77	17	15	25	22	-	-	22	22	8	8	16	16
1977/78	27	27	16	15	21	21	26	26	28	27	8	8
1978/79	27	26	22	21	15	15	47	47	26	26	27	26
1979/80	34	31	25	23	21	21	31	31	44	44	26	26
1980/81	29	25	32	32	22	22	39	36	24	24	43	41
1981/82	49	43	22	19	32	32	33	31	34	34	24	23
1982/83	29	25	43	42	19	19	61	55	30	30	32	32
1983/84	45	41	26	22	42	42	37	35	54	53	30	30

E = Enrolment

P = Passes

In 1985/86, the enrolment for B.Stat by country was as follows:

Country	Year I	Year II	Year III	Total
Uganda	51	38	18	107
Kenya	-	4	2	6
Tanzania	-	-	-	-
Zambia	3	2	-	5
Liberia	1	-	-	1
Ghana	-	2	1	3
	55	46	21	122

The main constraints for external participation was lack of fellowships.

19. Link with other Institution

(a) With EASTC, Dar-es-Salaam

(b) IDS, Sussex (under exploration)

20. Research activities

Research is on-going on the following topics:

(a) Fertility Determinants (in Uganda)

(b) Methodology for Agricultural Statistics (in Africa)

(c) Systems of Social Indicators for Africa

(d) Methodology for Integrated Sample Surveys in Africa

(e) Methodology for Estimation of Subsistence Sector Contribution to GDP

1. Country : Algeria

2. Name of the Centre: Institut national de la planfication et de la statistique (INPS), formerly ITPEA

3. Attached to : Ministère de la planification et de l'amenagement du territoire

4. Address : 11, Chemin Doudou Mokhtar
(formerly chemin de la touche)
Ben Aknoun, Alger

Telephone: 78-41-33
78-41-39

5. Name of the Director : Lounes Bourras

6. Objectives

The Institut national de la planification et de la statistique (INPS) is an institute of specialized higher education. Its aim is to train in the fields of planning, statistics and quantitative methods applied to economics.

The institute is charged with the responsibility of (i) training Techniciens supérieurs, Ingénieurs d'Etat and Magisters, (ii) conducting refresher courses, specialization and further training of techniciens supérieurs, ingénieurs and holders of equivalent diploma or degree, and (iii) carrying out research work in relation to planning, statistics and quantitative methods applied to economics.

In other words, INPS contributes to the development efforts of sister and friendly countries by also accepting students from various countries which are sponsored by their Governments as well as by international organizations such as UNDP, etc.

7. Historical background

The Institute was established, under its former denomination "Institut des techniques de planification et d'économie appliquee (ITPEA)" by decree No. 70-109 of 20 July 1970 within the framework of an extensive programme implemented in the context of the first five-year plan.

The name ITPEA has been changed to "Institut national de la planification et de la statistique (INPS)" by decree No. 83-692 of 26 November 1983. According to this decree the Institute which included only one training programme leading to the diploma of Ingénieur d'application de la statistique (AS) and analyste de l'économie (AE), now includes three training programmes: Techniciens superieurs, Ingénieurs d'état and Magisters (post-graduate).

8. Academic staff

The academic staff of INPS is composed of 37 permanent teachers, 8 part-time teachers and 12 associate teachers. The teaching staff are generally of Algerian nationality (96 per cent) and hold a third-level diploma (Higher studies, Masters, third-level or State doctorate, professor).

9&10 Teaching programme and admission requirements

INPS is now composed of three teaching programmes.

(a) The programme of techniciens supérieurs

- Duration of the course: 3 years
- Level of admission: The admission in the first year is by competitive examination for candidates holding secondary school diploma in mathematics science, economic or accounting techniques, and for holders of a recognized equivalent diploma.
- Time table: A timetable has been prepared for the programme of techniciens supérieurs; it comprises the following courses:

First year

Courses	Number of hours per week
Spatial analysis	2
Mathematics	4
Descriptive statistics	4
Economics	3
Theory of statistics	2
General accounting	3
Administrative and political institutions	2
Techniques of expression	2
Computer science	2
Total number of hours per week	24

Second year

Courses	Number of hours per week
Statistical theory and methods	4
Mathematics	4
Economics	3
Demography	2
Computer science	2
Applied sampling	2
Time series	2
National accounts	3
Total number of hours per week	22

Third year

Courses	Number of hours per week
Regression analysis	2
Introduction to data analysis	2
Entreprise economics	2
Introduction to planning techniques	2
Applied statistics	2
Total number of hours per week	10

(b) The programme of Ingénieurs d'Etat

- Duration of the course: 5 years

- Level of admission: The admission in the first year of ingénieurs d'Etat training is by competitive examination for candidates holding a second school diploma in mathematics, or a recognized equivalent diploma.

- Time table: The teachings programme comprises the following courses.

First year

Courses	Number of hours per week	
	First semester	Second semester
Economic theory	7	6
Mathematics	7	7
Descriptive statistics	4	4
Computer science	-	3
General accounting	-	3
Economic geography	3	2
"IAP"	3	-
Techniques of expression	3	3
Total number of hours per week	27	28

Second year

Courses	Number of hours per week	
	First semester	Second semester
"ECC - of DUPT & REI"	4	4
Monetary economics	-	2
Public finance	2	-
Mathematics	6	6
Mathematical statistics	6	6
Computer science	3	3
National accounts	4	4
Analytic accounts	3	-
Micro-economics	-	-
Total number of hours per week	28	28

Third year

From the third year, there are two options in the training programme: (i) the training of analystes de l'économie and (ii) the training of ingénieurs d'application de la statistique.

(i) Analystes de l'économie option

Courses	Number of hours per week	
	First semester	Second semester
TGP	4	-
TPC 1	-	3
Algerian economy	4	-
Demography	4	2
Sectorial planning	-	4
Projects evaluation	-	4
Computer science	3	3
Operational research	4	-
UP planning and management	-	4
Financial mathematics	4	-
Econometrics	-	3
Methodology	-	4
Spatial analysis	4	-
Total number of hours per week	27	27

(ii) Ingénieurs d'application de la statistique option

Courses	Number of hours per week	
	First semester	Second semester
TGP	4	-
TPC 1	-	3
Decision theory	4	3
Operational research	4	4
Sampling	4	3
Econometrics 1	3	3
Data analysis	3	3
Computer science	-	3
Demography	4	2
Methodology	-	4
Total number of hours per week	26	28

Fourth year

(i) Analystes de l'économie option

Courses	Number of hours per week
"TPC 2"	2
Labour force planning	4
Services planning	4
Prices planning	4
Industrial planning	2
Agricultural planning	2
Regional planning	4
Methodology	2
Total number of hours per week	25

(ii) Ingénieurs d'application de la statistique option

Courses	Number of hours per week
Demography 2	4
Time series	4
Econometrics 2	4
Information theory	2
Operational research 2	4
Methodology	2
"TPC 2"	3
Total number of hours per week	25

The fifth year programme is not yet communicated to the ECA Statistics Division. It is however considered that it will be a research and practical work year with a view to the preparation and the defence of a thesis.

(c) The Magisters' (post-graduate) programme

- Duration of the course: 3 years

- Level of admission: The following candidates can apply for admission to the competitive examination of the Magisters programme:

  The ingénieurs d'application de la statistique of INPS

  The analystes de l'économie of INPS

  The holders of degree in economic science (planning, management, financial science, econometics option). The holders of degree in mathematical higher studies (DES mathematics)

  The ingénieurs d'état

  Or any other candidate holding a diploma or a well recognized equivalent, obtained after at least four years of higher studies.

  The definite admission is by three competitive examinations in three subjects namely mathematics statistics and economics.

- Time table

  During the first two years of study which is divided into four semesters, the students take theoretical courses with specialization and initiation to research. These are subjects whose knowledge will be required from time to time. The first semester of the first year is devoted to the harmonization of students levels. The programme is defined for each batch of students according to the results of the competitive examination and the general level of the selected candidates.

  The students who have successfully completed the two years of post-graduate training are admitted to undertake a year's research work leading to the preparation and defence of a thesis.

11. Tuition fees

In 1979, the tuition fees were as follows:

- 13,546 Algerian dinars per student per year (full fees).

- 5,269 Algerian dinars per student per year, partial fees covering tuition only (classes, practical work, lectures, documentation).

12. Fellowships

Students of Algerian nationality who are admitted for the different cycles of training, sign a ten year contract with the Ministry of Planning and Territorial Development and are paid an allowance during the period of their studies pursuant to the provisions of the decree No. 71-287 of 3 December 1971.

- During the third year of the techniciens supérieurs cycle, the students **are paid** a monthly allowance of DA 2,500 gross.
- During the fifth year of the ingénieurs d'état cycle, the monthly allowance paid to the students is DA 3,750 gross.

13. Living conditions

The students who are not residents of Wilaya d'Alger are given full boarding facilities within the Institute which has 250 places in respect of which DA 150 are deducted from their monthly allowances. Students who are residents of the Wilaya d'Alger can be admitted as half-boarders of the Institute.

Transport service is provided twice a day to the staff and students of the Institute to and from the major residential areas of Alger.

14. Intake and output

Table I. Output per year

Year	Analystes		IAS		Total
	Nationals	Foreigners	Nationals	Foreigners	
1973	45	-	24	-	69
1975	43	-	27	-	70
1976	39	-	28	-	67
1977	36	3	43	-	82
1978	43	7	47	1	98
1979	32	3	29	-	64
1980	31	1	34	2	68
1981	35	3	48	1	87
1982	26	7	46	2	81
1983	24	2	33	-	59
1984	-	-	-	-	-
1985	-	-	-	-	-
1986	-	-	-	-	-
Total	354	26	359	6	745

Table II. Diplomas offered to foreign students by nationality

Countries	Number of Diploma		Total
	Analystes	IAS	
Niger	12	2	14
Benin	6	-	6
Guinea Bissau	2	1	3
Guinea	-	1	1
Congo	3	-	3
Comoros	2	-	2
Togo	-	1	1
Senegal	-	1	1
Madagascar	1	-	1
Total	26	6	32

1. Country : Cameroon

2. Name of Centre : Institut sous-regional de statistique et d'économie appliquée (ISSEA)

3. Attached to : -

4. Address : P.O. Box 294
Yaounde

Telephone: 22-01-34
Cable address: CIFS-YAOUNDE

5. Name of the Director: Paul Ngogang (Acting)

6. Objectives

The Institut sous-regional de statistique et d'économie appliquée is intended for students who have received a diploma at the end of their secondary school studies and are to join the middle- and higher-level cadres of the body of statisticians which user countries need to produce the statistics required for their economic and social development.

7. Historical background

The idea of opening a statistical training centre at Yaounde arose from the first Conference of African Statisticians which was held at Addis Ababa, Ethiopia, in September 1959. The Centre, which was set up in November 1961 under the auspices of the Economic Commission for Africa and the Cameroonian Government for the countries of Central Africa was known as the Centre international de formation statistique de Yaounde (CIFS).

In January 1969, the Governing Council of the United Nations Development Programme (UNDP) approved a project relating to the establishment of a statistical training institute with a view to developing the old centre which would take care of all interested French-speaking countries.

The statistical training institute became the Institut de statistique de planification et d'économie appliquée (ISPEA), and by an Agreement signed at Brazzaville in December 1984, ISPEA became an International Organisation with the name "Institut Sous-Régional de Statistique et d'Economie Appliquée (ISSEA).

8. Academic staff

ISPEA has a core of 12 permanent teachers, most of whom are Cameroonians, 36 part-time teachers and two consultants per year sent by international organisations. The Cameroonian teachers are statistical ingénieurs who are well experienced and qualified in their fields (mathematics applied statistics, statistical practice). Assistants help with other basic subjects and particularly statistical methods and economics.

The part-time staff, both Cameroonians and expatriates, are high-level officials or teachers at the University or other institutes of higher learning in Yaounde. They give certain courses in applied economics and various other subjects.

9. Teaching programme

ISPEA offers three courses:

9.1 Agents techniques de la statistique

9.1.1 Duration of the course: 9 months

9.1.2 Level of admission: Holders of the BEPC (four year of secondary school education).

9.1.3 Number of places in 1986: 30

9.1.4 Time table: Instruction consists of an average of 600 hours of teaching and laboratory work in addition to 125 hours of tests and a four-week period of practical work at the end of the course:

- Statistics	130 hours
- Mathematics	130 "
- Economics	30 "
- Economic geography	35 "
- French	30 "
- Demography	30 "
- English	30 "
- Statistical practice	125 "
- Miscellaneous	40 "
Total	530 hours

9.1.5 Assessment: Assessment is by weekly essays and quarterly examinations. All marks obtained during the academic year are taken into consideration in the final results. Regular students must obtain at least an average of 12 out of 20 to obtain the final diploma.

9.1.6 Academic year:

Starts : 1 October
Vacations : 2 weeks in December
2 weeks in March
Practical work: (10 April to 10 May)
1 month
Ends : 30 June

9.2 Adjoints techiques de la statistiques

9.2.1 Duration of course: 2 years

9.2.2 Level of admission: holders of the preliminary baccalaureat

9.2.3 Number of places in 1986: 25

9.2.4 Time table: The instruction offered to adjoints techniques consists of 650 hours of teaching and laboratory work and 140 hours of assessment in the first year. Those who are admitted to the second year receive 500 hours of teaching and laboratory work and 125 hours of assessment. During the entire course three months of practical work are required: one month in the first and two in the second.

Note will be taken of the importance attached to assessment: almost one hour out of four of classroom or laboratory work.

The breakdown of the time spent in each subject or group of subjects is as follows:

- Statistical methods	25 per cent
- Applied statistics	26 per cent
- Mathematics	22 per cent
- Economics, economic geography, enterprise accounting	14 per cent
- Others	13 per cent

9.2.5 Assessment

Assessment is by weekly essays and quarterly examinations. All the marks obtained during the academic year are taken into consideration in determining students' results either for admission in a higher class or for the final diploma.

Regular students must obtain at least an average of 12 out of 20.

9.2.6 Academic year

First year:

Starts : 1 October
Ends : 20 June
Vacations : 2 weeks in December
2 weeks in March
Actual length of course : 32 weeks
Long holidays : 1 July to 31 August
Practical work : 1 month from 1 to 30 September

Second year:

Starts : 1 October
Ends : 30 June
Vacations : 2 weeks in December
2 weeks in March
Actual length of course : 23 weeks
End of course : 10 April
Practical work : 2 months (April/May)
Examinations : 10-15 June

9.3 Ingénieurs d'application de la statistique

9.3.1 Duration of course: 3 years

9.3.2 Level of admission: Holders of series C baccalaureat

9.3.3 Number of places in 1986: 25

9.3.4 Time table: Instruction consists of compulsory courses taken during the first two years in which fundamental subjects are taught. The third year's programme consists of two options in statistics and applied economics.

First year

	Number of teaching and laboratory work hours		
Subject	Teaching	Laboratory work	Total
Mathematics	90	50	140
Descriptive statistics	60	40	100
Numerical calculus	20	16	36
Introduction to probability	30	18	48
Descriptive economics	100	40	140
Computer science	12	8	20
Other subjects			
Enterprise accounting and management	30	24	54
Economic geography	40	12	52
Drafting techniques	-	32	32
English	46	16	62
Practical work (1 month)			
TOTAL	428	256	684

Second year

Subject	Number of teaching and laboratory work hours		
	Teaching	Laboratory work	Total
Mathematics for Economics	60	40	100
Probability and mathematical statistics	50	40	90
Sampling theory and practice	30	15	45
Micro-economics	24	8	32
Macro-economics and growth	24	8	32
Enterprise economics	16	-	16
National accounting	32	-	32
Planning	24	-	24
Introduction to econometrics	20	10	30
General demography	20	12	32
Price statistics	10	6	16
Budget and consumer surveys	10	6	16
Foreign trade statistics	10	6	16
Computer science	-	24	24
Case studies	-	16	16
Seminars	-	-	-
Other subjects			
Operational analytical accounting	16	12	28
Organization of a statistical service	8	-	8
Documentation and publications	-	16	16
English	34	12	46
Practical work: 2 months			
TOTAL	388	231	619

Third year

Statistics options		Economics options	
Subject	No. of teaching and laboratory work hours	Subject	No. of teaching and laboratory work hours
Data analysis	40	Economic analysis	40
Mathematical statistics	48	Development economics	24
Sampling theory and practice	64	Planning system and case study	20
Indices theory	12	Planning techniques	-
Case study	48	Project analysis and evaluation and case studies	32
		Sectoral planning and case study	32
		Plan analysis	16
		Planning organization	10
		Essays and homework	24
		Applied econometrics	20
TOTAL	212		218

Subjects common to the two options	No. of teaching and laboratory work hours
National accounting	32
Economic surveys	32
Agricultural statistics	20
Industrial statistics	20
Transport statistics	15
Labour statistics	15
Educational statistics	10
Health statistics	10
Computer science	32
Sociology and psychology of development	48
Seminars	26
English	46
TOTAL	306

Practical work: 3 months

9.3.5 Teaching methods and assessment procedures

The teaching methods are based on the following four objectives:

1. To make the students capable of dealing with all kinds of problems which the statistician meets;
2. To give students special training in the field they are most gifted or in which they demonstrate most interest;
3. To develop students imagination, judgement and capacity for analysis and synthesis;
4. To make students able to communicate and convince others.

The pedagogical methods used to implement these objectives are based on:

1. Team work, homework, exposes-discussions, personal research work, case studies, field demonstrations, seminars, preparation of final dissertation, observation and professional work in the field;
2. Assessment is of a continuous nature and includes tests or oral questionning and evaluation of the students' work during the year for which specific marks are given;
3. In addition to the examination results, a general appreciation is made of each student. This covers the laboratory work, work in the field, work during the field attachment and the value of reports provided, as well as taking into account the behaviour and industriousness of each student.

9.3.6 Examination regulations

(a) To advance to a higher class at the end of the school year students must obtain an average mark of 12 out of 20 or higher;

(b) Students who have obtained a mark lower than 12 out of 20 will, according to the mark they have received, be:

- Terminated from the Institute
- Allowed to repeat
- Required to resit their examinations

(c) According to the results of the resit examinations students will be:

- Allowed to advance to the higher class
- Allowed to repeat
- Terminated from the Institute

(d) A student may repeat only once during the entire course.

Graduating students will rank according to their general average over the three years' course. Students who have obtained a general average equal to at least 12 out of 20 will be awarded the diploma of Ingénieur d'application de la statistique.

9.3.7 School year

First year

Starts : 1 October
Ends : 30 June
Vacations : 2 weeks in December
2 weeks in March
Actual length of course: 32 weeks
Examination results : Second week in June
Resit examination : First week in October
Long holidays : 2 months from 1 July to 30 August
Practical training : 1 month from 1 to 30 September

Second year

Starts : First week in October
Ends : 30 June
Vacations : 2 weeks in December
2 weeks in March
Actual length of course: 32 weeks
Examination results : Second week in June
Resit examinations : First week in October
Practical training : 2 months from 1 July to 30 August

Third year

Starts : First week in October
Ends : 30 June
Vacations : 2 weeks in December
2 weeks in March
Actual length of course: 21 weeks
Defense of thesis of final term : between 15 and 30 June
Examinations results : Second week in June
Resit examinations : First week in October
Practical training : 2 months from 1 April to 30 May

9.4 Organisation of practical work

The ISSEA emphasizes practical training for its students, the aim being to make them operational as soon as they have finished their studies. This training is done in different forms:

9.4.1 Practical teaching work

As it can be noted in the tables indicating the courses taught in the different cycles (programmes) of the Institute, the total hours of practical work are important to enable students to assimilate the theoretical teaching (lectures). During the practical work students analyse data from surveys undertaken by themselves during their end of course field work. Before the introduction of the computer, this analysis was done manually but from the time ISSEA acquired a MINI 6 CII HONEY Well Bull computer, these analysis are done easily, more especially since computer science is taught in all the training programmes.

9.4.2 Economics exposés

In the 'ingénieurs d'application' programme, second year students prepare exposés mainly on some economics subject. The students gather in groups of two or three to work on one economics subject proposed by themselves or by the lecturer in economics. The advantage of these exposés is that students are able to search for information where ever they are available and to present to a small audience (one of the students of the group reads the paper while the other students who have worked with him on the same subject answer, if necessary, the various questions raised by the audience). By doing this, they learn how to speak to an audience.

9.4.3 The end of course practical work

ISSEA organises each year some practical work for students at the end of their training.

i) Organisation of practical work

Initially, students executed their end of training practical work in the various departments of ministries in Cameroon. The Institute used to send students to these Offices after a preliminary evaluation of the practical work programme which they were to follow. This procedure was found to be defective because the students were not well supervised.

For about five years now, the type of practical work described above has not been done. The Institute prefers to organize, each year, statistical surveys conducted by all the final year students. The survey subject is selected at the beginning of the academic year by the permanent lecturers. The students participate in all the stages of the survey (questionnaire preparation, data collection in the field, analysis, etc.). This type of practical work has no doubt more advantages. It allows the students to put into practice the knowledge gained during the lectures on the practice of statistical surveys, sampling as well as statistical methods.

The subjects of the survey are selected so that results obtained can be utilised by research fellows from other universities and also by administrators in the economics field.

ii) Results obtained so far

The results so far obtained enable to highlight the position of these practicals in the process of the training. The number of students of the Institute who have conducted surveys in the field at the end of their training (census, survey on employment, etc.) have been found to be competent in their field work. Also the Institute has conducted through practical work several studies mainly the following:

- Sample survey on housing in Yaounde
- Survey on wood and furniture
- Survey on household expenditures
- Survey on health problems in Yaounde
- Census of small and medium scales industries in Yaounde

The results of these various studies have some deficiencies since the size of the samples are often reduced due to the limited resources allocated by the Institute for these studies and the relatively short time devoted to these studies each year. However in spite of these problems, these surveys are very useful in the completion of the theoretical training given to the students.

10. Admission requirements

Any entry into different academic programmes of ISPEA is by competitive examination. Students may be allowed to sit for the competitive examination of the following programmes:

i) Ingénieurs d'application de la statistique

Candidates holding the second level series C (mathematics) baccalaureat;

ii) Adjoints techniques de la statistique

Candidates should hold the preliminary baccalaureat;

iii) Agents techniques de la statistique

Candidates should hold the BEPC (four years of secondary school education).

Candidates who wish to sit any of the examinations should fill out an application form which is available at the local statistical service. The form together with the following documents

- Birth certificate
- Copy of the requisite diploma
- Certificate of nationality
- Medical certificate

should reach ISSEA before 15 April. Foreigners' application forms and relevant documents should be transmitted through the statistics department of the country of which the applicant is a national.

Applicants for the *ingénieur d'application de la statistique* course who are still in the last class of high school may sit the examination subject to their obtaining the baccalaureat (except for the Cameroonian candidates).

The competitive examination is held in the first half of May. It is held in the capitals of all countries concerned under the responsibility of the local department of statistics.

The competitive examination for the *ingénieurs* is the same at the Abidjan and Kigali centres. The examination panel meets on 30 June at the latest under the auspices of CESD in Paris.

The results of the competitive entrance examinations are generally announced during the second half of July.

11. Tution fees

Tuition fees are as follows:

Ingénieurs d'application: 540,000 CFA francs per year
Adjoints techniques : 420 000 CFA francs per year
Agents techniques : 270 000 CFA francs per year

12. Fellowships

ISSEA accepts only those students who have fellowships. However, admission to the Institute does not automatically imply that a fellowship will be granted.

The following institutions and agencies generally bear the costs of students at the Institute as long as they are requested to do so early enough by the user Government:

- United Nations Development Programme (UNDP)
- Commission of the European Communities (EEC)
- World Health Organization (WHO)
- Food and Agriculture Organisation of the United Nations (FAO)
- USAID
- World Bank
- Canadian International Development Agency (CIDA)

Requests for fellowships are absolutely independent of applications to sit the competitive examinations.

13. Living conditions

The Government facilitates entry into and stay in the United Republic of Cameroon for all foreign students who are admitted to the Institute.

Medical care and hospitalization for students at ISSEA will be provided according to the terms set out in the regulations in force in the United Republic of Cameroon.

Transport is provided for students by the Institute. Lodging facilities (a total of 60 rooms) offered against a minor contribution to the fees (5,000 CFA per month for the rent and water in general).

Building will start on the new premises of the Institute in the very near future. The premises will *inter alia* comprise 15 classrooms with the total capacity of 500 places, an amphitheatre with 300 seats, 32 offices, a teachers' room, a reproduction room, a library, a cafeteria and a computer room.

14. Intake and output

14.1 Overall status of the training conducted by ISSEA

This overall status covers the training conducted under the "Centre International de Formation Statistique" (CIFS) from 1961 to 1968, the "Institut de Formation Statistique" (IFS) from 1968 to 1976, the "Institut de Statistique, de Planification et d'Economie Appliquée" (ISPEA) from 1976 to 1984 and the "Institut Sous-Régional de Statistique et d'Economie Appliquée" (ISSEA) from 1984 to 1986.

During the period of its existence, the Institute has trained students from the following countries:

1. Republic of Burundi
2. Peoples Republic of Benin
3. Republic of Burkina Faso
4. Republic of Cameroon
5. Central Africa Republic
6. Republic of Comores
7. Peoples Republic of Congo
8. Republic of Djibouti
9. Republic of Gabon
10. Republic of Guinea (Conakry)
11. Republic of Equatorial Guinea (since October 1986)
12. Republic of Mali
13. Republic of Madagascar
14. Republic of Mauritania
15. Republic of Niger
16. Republic of Rwanda
17. Republic of Senegal
18. Republic of Chad
19. Republic of Togo
20. Republic of Zaire

In total up to June 1986, 1,413 graduates have been trained at the Institute.

Ingénieurs d'application de la statistique	152
Adjoints techniques	477
Agents techniques	784

It should be mentioned that the following students will be trained at the end of 1986/1987 academic year:

Ingénieurs d'application de la statistique	20
Adjoints techniques	21
Agents techniques	30

When these results are added to those for the years 1961 to 1986, the total number of graduates as at 30 June 1987 should be:

	Programmes	Outputs
1.	Ingénieurs d'application de la statistique	172
2.	Adjoints techniques	498
3.	Agents techniques	814
	Total	1,484

However, without expressing over-satisfaction, it can be said that during the 25 years of its existence, the "Institut de Statistique" of Yaounde had contributed tremendously to the provision to the French-speaking African countries of statistical staff which they need for their development planning. However, before praising the Institute for this significant achievement, it is worth considering whether the staff thus trained were able to apply the knowledge acquired during their training, in the field. It was with this in mind that the Management of the Institute has been conducting a survey among the former students of the institute for the past two years.

Admittedly the results of this survey are not yet available due to the difficulty in laying hands on all the former students.

Pending the results of the survey, one can, on the basis of Cameroon which alone has turned out more than half of the 1,484 graduate statisticians, judge the training given by the Institute.

In fact, all the graduates of Cameroon nationality, who passed their course at the Institute, have so far been employed by the Government soon after their graduation and, according to their various users, their performance in the field have been very satisfactory.

It has also been confirmed by the fact that each year before a group of students graduate, requests start pouring in from all coners, both from the State, parastatal and private sectors. There are in Cameroon some ministries such as the Ministry of National Education which employ over 40 (forty) statisticians trained by the Institute. A large number of these statisticians rise very rapidly to positions of responsibility (Head of Department, Assistant Directors, etc...) after only a few years of practice, which is an excellent sign since Ministerial Departments in Cameroon are full of all kinds of senior administrative staff.

14.2 Enrolment (E) and passes (P) from 1977 to 1984

Programmes	1977-78		1978-79		1979-80		1980-81		1981-82		1982-83		1983-84		1984-85		1985-86		1986-87	
	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P(1)
Ingénieurs d'application de la statistique																				
First year	21	19	30	26	22	17	19	18	21	17	19	17	23	22	24		23	21	17	
Second year	19	17	20	19	27	23	19	19	19	19	17	17	17	17	22		23	20	24	
Third year	-	-	17	17	19	19	23	22	20	18	19	19	17	17	14		22	22	20	
Adjoints techniques de la statistique																				
First year	26	24	25	24	26	21	21	20	21	19	23	22	22	23	29		30	[illegible]	22	
Second year	23	23	23	23	23	19	21	20	19	17	17	15	21	20	23		26	26	21	
Agents techniques de la statistique	36	32	32	27	24	20	27	25	31	25	30	27	17	13	22		18	17	29	

(1) Outputs for 1984/85 academic year have not been obtained from the centre.

1. Country : Cameroon

2. Name of the Centre : Institut de formation et de recherche démographiques (IFORD)

3. Attached to : Ministère du plan et de l'amenagement du territoire

4. Address : B.P. 1556
Yaounde (Cameroon)

Telephone: 22-24-71
Telex: 8304KN (UNDEVPRO)
8441KN ([illegible])

5. Name of the Director: Mpembele Sala-Diakanda

6. Objectives

The aim of the Institut de formation et de recherche démographiques is to promote and strengthen demographic training and research in all French-speaking African countries. In this connexion, the aims and objectives of the Institute are as follows:

- Serve as a training and research centre in the field of demography and related areas;
- Organize intensive training courses, refresher courses and seminars;
- Undertake, direct and publish research work on demographic trends and their relationships with economic and social factors;
- Undertake field research work in countries serviced by the Institute with the consent of the Governments of these countries;
- Provide these countries with consultancy services in the field of demography and related areas.

7. Historical background

The Institut de formation et de recherche démographiques was inaugurated at Yaounde in November 1972 following an agreement signed between the Government of Cameroon and the United Nations Organization.

Until July 1982, IFORD was jointly financed and administered by its two founders.

The Institute has been regionalized since 1 July 1982. This regionalization started with the decentralization of the management of IFORD to the benefit of ECA and was completed with the extension of the membership of the Governing Council to all the Countries serviced by the Institute, numbering 25, and the implementation of new statutes adopted in 1982 by the United Nations General Assembly.

8. Teaching staff

The permanent teaching staff of the Institute is composed of 5 United Nations experts (including the Director), an expert from the French Technical Assistance, a United Nations associate expert and a Cameroonian demographer placed at the disposal of the Institute.

Eighty per cent of the over-all teaching is done by the permanent staff, 8 per cent by consultants (4 to 6) recruited from various agencies outside the host country, and 12 per cent by locally recruited visiting lecturers (4 to 6).

9. Teaching programme

9.1 Academic training

9.1.1 Objectives

The academic training which is geared towards providing countries serviced by the Institute with specialists in population studies is centred on four main objectives:

(i) To give students a solid theoretical training in demography thus enabling them to analyse and interprete population data;

(ii) To enable students acquire practical experience in data collection to help them undertake demographic data collection operations;

(iii) To make it possible for students to understand the interactions between population growth and economic and social development, so as to make them experienced specialists capable of advising governments in formulating demographic policies;

(iv) To introduce students to research work.

9.1.2 Duration of the course: The training lasts for two years

9.1.3 Level of admission

The entrance examination is administered to holders of a Bachelor's degree or equivalent diploma and comprises two options (see section 10).

9.1.4 Teaching programme

On the basis of the afore-mentioned objectives, the Institute's training programme gives relative importance to the major disciplines necessary for the mastery of the tools for demographic analysis and fundamentals of economic and social sciences so as to better understand the relationships between demographic phenomena and socio-economic phenomena.

Teaching programme for the whole two years course

1. Demography 375 hours (37%)

101 Introduction to demography
102 Demographic analysis methods
103 Mortality
104 Nuptiality
105 Fertility
106 Population situation
107 Migration
108 Active population and school attendance population
109 Population geography
110 Demographic perspectives
111 Evaluation and adjustment of inaccurate data
112 Population movements and patterns
113 Survey results analysis
114 Mathematical demography

2. Collection and processing of data 160 hours (15%)

201 Data collection
202 Realization of collection operations
    (preparation, implementation, processing)
203 Data processing
204 Initiation to the use of software for data processing and analysis
205 Practice of demographic surveys

3. Quantitative methods 120 hours (11%)

301 Descriptive statistics
302 Mathematical statistics A
303 Mathematical statistics B
304 Sampling
305 Computer science
306 Multidimensional methods of data analysis

4. Economics, sociology and connected disciplines 285 hours (30%)

401 General economics
402 Development economics
403 Population theories
404 Population policies
405 Population sociology
406 Demographic transition
407 Urbanization
408 Population and environment
409 Population and development
410 Exercises and exposés
411 Public health and morbidity
412 Regulation of births

5. Miscellaneous activities and courses 80 hours (7%)

501 Written and oral expression techniques
502 End of terms thesis
503 English
504 Sports

First year course

Demography 230 hours (H) (44%)

- Introduction to demography	10H
- Methods of demographic analysis	50H
- Mortality	25H
- Nuptiality	15H
- Fertility	25H
- Population situation	20H
- Migration	30H
- Active population, school attendance population	40H
- Population geography	15H

Collection and processing of data 100 hours (19%)

- Data collection	35H
- Carrying out data collection operations	PM
- Data processing	25H
- Initiation to the use of software for data processing and analysis	40H

Quantitative methods A : 80H B : 80H (15%)

- Descriptive statistics A, B	20H
- Mathematical statistics A	30H
- Mathematical statistics B	30H
- Computer science	30H
- Multidimensional methods of data analysis	20H

Economy, sociology and connected disciplines 65H (12%)

- General economy	40H
- Development economics	25H

Miscellaneous activities and courses 50H (10%)

- Written and oral expression techniques	20H
- English	30H
- Sport	PM

Second year course

Demography 150H (30%)

- Perspectives	30H
- Evaluation and adjustment of inaccurate data	60H
- Population movements and patterns	20H
- Survey results analysis	20H
- Mathematical demography (F)	20H

Collection and processing of data 60H (12%)

- Practice of demographic surveys	20H
- Carrying out of data collection operations (preparation and training of supervisors)	40H

Quantitative methods 40H (8%)

- Sampling

Economy, sociology and connected disciplines 220H (44%)

- Population theories	15H
- Population policies	15H
- Population sociology	25H
- Population and Development	50H
- Demographic transition	15H
- Urbanization	20H
- Population and Environment	20H
- Exercises and Exposés	25H
- Public health and morbidity	20H
- Regulation of births	15H

Miscellaneous activities and courses 30H (6%)

- End of terms thesis	PH
- English	30H
- Sports	PH

(F) - This is an optional course

9.1.5 Awards

The students take written examinations in each subject, varying from one to four depending on the duration and the number of hours involved. An average mark of 60 per cent is required for promotion from the 1st. year to the 2nd. and for obtaining the Diplôme d'études démographiques (DED) which marks the end of the training. However, a candidate in the 2nd year and scoring a weighted average mark of less than 50 per cent in the two subjects namely "survey analysis" and "case studies" may either be deferred to September session or denied the DED.

9.2 Practical induction course on research

Each year, the Institute organises an induction course in research for the new Diploma holders from the Institute or from other demographic centres.

This course which lasts one year enables the candidates to be introduced to research work by participating in the work of the Institute's Research Department and doing individual work under the supervision of more experienced demographers and in contact with several researchers.

No diploma is awarded after this course. However, at the end of it, each student is required to carry out a research work likely to be published or produced in the form of memoire of DEA in Demography (Diploma of in-depth studies).

9.3 Other training activities

9.3.1 Intensive introductory courses on demography and statistics

These courses are organised at national levels in countries which participate in the training cycle at the Institute and are based on lecture notes prepared by IFORD professors.

The training in this area is directed at persons holding middle-level qualifications such as Agents or Adjoints techniques de la statistique (certificate and diploma levels) from national statistical services, health statistics units and other appropriate services.

These courses take about 3 weeks.

9.3.2 Refresher courses

Each course is organised on a particular theme recognised to be of current interest to all practising demographers in Africa.

These courses, of maximum duration of 4 weeks, are intended for active demographers.

Participants are selected on the basis of individual applications which are studied by a panel composed of representatives from IFORD and other agencies sponsoring the course.

The theme and the place of each course are decided by the same panel.

10. Admission requirements

Entry into the Institute's academic studies cycle is exclusively by competitive examination, every two years since April 1985.

Holders of one of the following qualifications may be allowed to sit for the competitive examination.

(i) Ingénieur des travaux statistiques (ITS)

(ii) A degree in geography, sociology, economics or mathematics

(iii) A diploma equivalent to one of these two types of qualifications. The management of the Institute is the only body empowered to decide on the equivalence of the qualifications.

However, students in their final year and preparing for their degree examinations or completing their ITS courses in June of the same year, shall be allowed to sit for the competitive examination.

Their admission is granted on condition that they present their degree or ITS diploma by 15 July.

In view of the diversity of the previous training received by the candidates, the examination allows 2 options, A and B. The A option is intended for the holders of a degree in geography or sociology or an equivalent diploma; B option for ingénieurs des travaux statistiques or holders of a degree in economics or mathematics or an equivalent qualification.

Candidates are expected to satisfy the following three conditions if they should be allowed to follow the IFORD academic training cycle:

- pass the competitive entrance examination;
- prove before or after the examination that they possess the required qualifications;
- have their governments submit their applications for fellowship to IFORD.

11. Tuition fees

Fellowships are awarded to candidates from a global annual subvention allocated to IFORD by UNFPA. They cover all the expenses of the students, including expenses directly connected with their training.

12. Fellowships

IFORD admits only students who are scholarship holders.

Any student admitted on the basis of passing the entrance examination is automatically awarded a scholarship by the Institute if his application is endorsed by the appropriate authority sponsoring demographic studies in his country of origin.

13. Living conditions of foreigners

On the basis of the Agreement that the Cameroonian Government had signed with the Institute, the former facilitates the entry into and stay in the Cameroonian territory by all foreigners admitted for the IFORD training cycle.

The Institute provides accommodation and means of transport to the students.

14. Intake and output

Table 1. Results of competitive examinations by year and option

Year	Number of Countries	Number of successful candidates					
		Option A	Option B	Total	Option A	Option B	Total
1973*	5	-	-	-	3	5	8
1974	13	22	28	50	10	17	27
1975	12	24	29	53	9	12	21
1976	10	28	27	55	8	14	22
1977	14	50	20	70	12	11	23
1978	15	57	31	88	11	6	17
1979	16	67	53	120	7	11	18
1980	18	74	55	129	13	7	20
1981	17	69	128	197	9	13	22
1982	16	99	139	238	15	10	25
1983	21	99	183	282	10	9	19
1984	19	125	146	271	14	9	23
1985	18	142	151	293	11	13	24

* There was no competitive examination. The recruitment was made on the basis of qualifications.

Table 2. Distribution of graduates by year of graduation and by country

Country	Year of graduation													
	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total
Algeria	-	-	-	1	-	2	-	-	-	-	1	-	-	4
Benin	1	-	4	-	-	-	1	1	-	2	2	1	-	12
Burkina Faso	-	-	1	-	1	-	-	1	2	1	1	2	1	10
Burundi	-	-	-	-	-	-	1	-	-	-	-	2	-	3
Cameroon	2	2	4	5	5	4	3	6	4	3	2	2	2	44
Central African Rep.	-	-	-	-	-	-	2	-	-	-	-	-	1	3
Chad	-	-	-	1	-	-	2	-	-	1	2	-	-	6
Congo	-	-	1	-	1	-	3	3	1	1	1	3	2	16
Côte d'Ivoire	-	-	-	-	-	-	1	-	3	2	1	2	-	10
Gabon	-	-	-	-	-	-	-	-	-	-	1	1	2	2
Guinea	-	-	-	-	-	-	-	1	1	1	-	-	-	3
Madagascar	-	1	3	-	3	-	-	-	1	-	3	2	1	14
Mali	3	-	1	3	-	-	1	-	1	2	1	1	-	13
Mauritania	-	-	-	1	-	-	-	-	-	-	1	-	-	2
Rwanda	-	-	-	-	-	-	1	-	-	1	-	-	-	2
Senegal	-	1	2	-	3	4	1	5	1	1	1	1	2	22
Togo	-	-	3	2	1	1	-	1	-	-	-	1	-	9
Zaire	-	-	-	-	1	1	1	-	-	-	2	-	2	7
Haiti	-	-	-	-	-	-	-	-	-	-	-	1	1	2
Total	6	4	19	13	15	12	17	18	14	15	19	20	13	185

20. Research activities

IFORD's mission in the field of research has been clearly spelt out in the Institute's objectives indicated earlier.

It involves the promotion and strengthening of research in the field of population of the countries serviced by the Institute.

This mission as far as research is concerned is directed towards the following three types of activities:

(i) Undertake research work;

(ii) Rrepare publications to facilitate the dissemination of information and knowledge on African populations;

(iii) Organise scientific meetings to popularies the work done in the region and facilitate exchange of ideas and experience between the specialists of the region.

IFORD cannot replace national institutions of demographic research or compete with them. Its mission is to conduct methodological types of research, studies at regional and sub-regional levels as well as all researches outside the framework of the countries taken individually. It is particularly incumbent upon it to formulate appropriate methodologies which take into account the realities of the region both at the level of data collection and analysis.

As far as the Institute is concerned, basic research does not constitute a priority. It is undertaken merely to provide accurate answers to specific questions.

Publications feature prominently among the activities of the Institute. They should be of assistance to all the countries serviced by the Institute and help in the promotion of demographic research in these countries; for, there can be no possible research development in the region without the means for adequate dissemination of knowledge and results of this research.

In this regard, IFORD has since 1979 been publishing a bulletin which is an information instrument on the activities and the work done in Africa in the field of demography. This instrument also gives information on demographers working in the region.

Furthermore, the Institute has since published ten issues of its magazine entitled Les Annales de l'IFORD devoted to publications on research work.

In the field of research, the Institute also has a mission to organise scientific meetings, such as symposia, seminars or workshops to enable the demographers of the region to exchange ideas and knowledge.

1. Country : Côte d'Ivoire

2. Name of the Centre: Ecole nationale superieure de statistique et d'Economie Appliquee (ENSEA)

3. Attached to : Ministry of Planning

4. Address : 08 B.P. 3 Abidjan 08
Telephone: 44-08-40
44-08-42
44-41-15

5. Name of the Director : Francois Yattien Amiguet

6. Objectives

The Ecole nationale supérieure de statistique et d'économie appliquée (ENSEA) is an establishment which provides statistical training at both the higher and the middle levels. Its aim is to train ingénieurs statisticiens économistes (ISE), ingénieurs des travaux statistique (ITS), adjoints techniques de la statistique and agents techniques de la statistique and also to ensure continued education for French-speaking African countries.

The ingénieurs des travaux statistique will occupy responsible positions in the Administration or large enterprises dealing with the preparation, dissemination and utilization of economic information which is collected and prepared by the agents techniques under the supervision of the adjoints techniques.

7. Historical background

The establishment was created in 1961 as a school of applied statistics attached to the department of statistics for the purpose of training technical staff. In 1963, the ingénieurs des travaux statistiques section was opened and the centre became the Ecole de statistique. The adjoints techniques section was opened in 1967. By a law of June 1969, the Ecole nationale supérieure de statistique et d'économie appliquée was converted into a public establishment of higher learning with legal status and financial autonomy. It is headed by a management advisory board composed of 8 members. Since March 1982, the objective of the school was extended to train ingénieurs statisticiens économistes and to ensure continued education.

8. Academic staff

In the academic year 1986/87, the full-time academic staff consisted of three Ivorians among whom one demographer, six INSEE statisticians and one physical education and sports teacher, making a total of ten staff.

The recruitment of ingénieurs statisticiens économistes and demographers as lecturers has started in October 1982 with two Ivorians of which one is an information scientist.

There are also 32 part-time teachers who provide some 1,602 course hours per year. The training of ingénieurs statisticiens économistes will start in October 1987.

9. Teaching programmes

9.1 Ingénieurs des travaux statistiques

9.1.1 Duration of the course: Training in this section lasts for three or four years depending on whether students are admitted into the first year by direct competitive exam or into the preparatory year by direct competitive examination or professional competitive examination.

9.1.2 Level of admission: Applicants should have passed the baccalaureat preferably in the science stream. The level of the mathematics tests is that of the science and technical streams in the last classes in high school or college. Applicants may be admitted on the basis of their qualifications after their files have been studied and as long as they hold a "DUES" or a recognized equivalent diploma.

9.1.3 Number of places offered in 1986: 20 in the first year
20 in the preparatory year

9.1.4 Use of time: Over the entire four years of training including the preparatory year, the 2,335 classroom and practical hours are divided as follows by major subjects not counting the practical attachment at the end of the course:

Mathematics	15 per cent
Statistics and demography	31 per cent
Economics	23 per cent
Computer science	13 per cent
Languages	9 per cent
Miscellaneous and case studies	9 per cent

The main aim of the preparatory year is to bring students in high schools to the required standard in mathematics (350 hours of classes and supervised work out of a total of 610 hours). They are also given an introduction to the basic subject taught at the school, viz, statistics. The language and contemporary civilization classes train students to summarise articles and present them orally or in the form of reports or summaries, to discuss them or read them in English and translate them.

In the first year, students learn mathematical analysis and linear algebra which are required to learn mathematical statistics, economics and planning techniques courses. Basic courses in statistical theory and analysis, probablity and demographic analysis are given. Students begin general economics by studying factors and units of production, revenue and economic fluctuations and follow a course in economic accounts.

In the second year, the theoretical education continues with mathematical statistics, but the application of statistical methods to various economic fields and demography take an important place in the timetable. Similarly the theoretical training in economics field is supplemented by a course on underdevelopment leading to more practical planning. A 30-hour compulsory course of multivariate analysis has been introduced since October 1980.

In the third year, students receive complementary basic education during their first term. At the same time either individually or in groups of two or three, they carry out a case study which makes them spend about 100 hours applying the knowledge they have learned at the school. The last six months are reserved exclusively for practical work aimed primarily at giving the students a more specific understanding of their future tasks and familiarizing them with practical difficulties and problems which they may encounter during their professional life. Moreover a large part of the time in the third year is reserved for further specialization in the following four options: computer science, management, applied statistics and demography.

9.1.5 Assessment

All students in the school are required to perform one or two exercises or sit a test once a week the ratings given for these will be taken into consideration with regard to promotion to higher classes and the award of diplomas.

Preparatory year

Subject	Weight	Indicative annual figure Written examination	 Oral examination
Algebra	21	6	1
Mathematical analysis	27	6	1
Numerical analysis and calculus	8	2	-
Descriptive analysis	11	4	1
Contemporary civilization	12	4	1
Economic geography	6	2	-
English	6	1	1
Physical education	(5)	-	-
General assessment	9	-	-
Total	100	25	5

Best copy available

A. PREPARATORY YEAR
"INGENIEURS DES TRAVAUX"

Distribution of total teaching hours and laboratory work

Subjects	Number of hours	
	Teaching	Laboratory work
1. Algebra	60	70
2. Mathematical analysis	80	90
3. Analysis and Numerical Calculus	20	30
4. Descriptive statistics	45	25
5. Contemporary civilisation and expression techniques	50	25
6. Introduction to economics	20	20
7. Compulsory English	40	-
8. Physical education	-	35
	315	295
	610	

KNOWLEDGE EVALUATION IN THE PREPARATORY YEAR
"INGENIEURS DES TRAVAUX"

Subjects	Weight	Annual indicative number of	
		Written tests	Oral tests
Algebra	21	6	1
Mathematical analysis	27	6	1
Descriptive statistics	11	4	1
Analysis and numerical calculus	8	2	-
Contemporary civilisation	12	4	1
Introduction to economics	6	2	-
English	6	1	1
Physical education	(5)	-	-
General assessment	39	-	-
	100	25	5

1. The length of written tests is left to the discretion of the teacher but should fall within the range of one and half to three and half hours.

2. The general assessment which is made at all levels take into account all the work done throughout the year, the industriousness and general behaviour of the student.

3. For physical education only, marks between 12 and 20 will be counted.

B. "INGENIEURS DES TRAVAUX" - First year

Total distribution of teaching hours and laboratory work

Subjects	Number of hours	
	Teaching	Laboratory work
I. MATHEMATICS & STATISTICS PROGRAMME	295	130
1. Algebra	60	25
2. Mathematical analysis	75	35
3. Statistical analysis	70	30
4. Calculus of probability	60	30
5. Demographic analysis	30	10
II. ECONOMICS PROGRAMME	95	45
6. Economic analysis	20	10
7. Micro-economics	25	10
8. Macro-economics	20	10
9. Enterprise accounting	30	15
III. MISCELLANEOUS	50	45
10. Computer science	20	10
11. Compulsory english	30	-
12. Physical education	-	35
	440	320
	760	

KNOWLEDGE EVALUATION

"INGENIEURS DES TRAVAUX" - FIRST YEAR

Subjects	Weight	Indicative annual number of	
		Written tests	Oral tests
Algebra	10	4	1
Mathematical analysis	12	4	1
Statistical analysis	13	4	1
Calculus of probability	13	3	1
Demography	8	2	-
Economic analysis	4	1	1
Micro-economics	4	1	1
Macro-economics	4	1	1
Enterprise accounting	9	2	-
Computer science	8	2	-
English (compulsory)	6	1	1
Physical education	(5)		
General assessment	9		
	100	25	8

1. The length of written tests is left to the discretion of the teacher but should fall within the range of one and half to three and half hours.

2. The general assessment which is made at all levels take into account all the work done throughout the year, the industriousness and general behaviour of the student. To be promoted to the second year of the "Ingénieurs des Travaux" Branch, students must obtain an average of at least 12 out of 20. The promotion panel may accept students whose average is between 10 and 12. For physical education only marks between 12 and 20 will be counted.

C. 'INGENIEURS DES TRAVAUX' - SECOND YEAR

Total distribution of teaching hours and laboratory work

Subjects	Number of hours	
	Teaching	Laboratory work
I. STATISTICS PROGRAMME	160	95
1. Mathematical statistics	80	45
2. Additional demographic analysis	20	10
3. Applied statistics	20	10
4. Statistical practice	20	20
5. Data analysis	20	10
II. ECONOMICS PROGRAMME	134	91
6. General economics	65	35
7. Economics seminars	14	26
8. Problems and techniques of development	25	15
9. Enterprise accounting	30	15
III. MISCELLANEOUS	100	70
10. Computer programming	30	25
11. Introduction to operations research	20	10
12. African sociology	20	
13. English (compulsory)	30	
14. Physical education		35
	394	256
	650	

KNOWLEDGE EVALUATION

(INGENIEURS DES TRAVAUX) - SECOND YEAR

Subjects	Weight	Annual indicative number of	
		Written tests	Oral tests
Mathematical statistics	15	4	1
Additional demographic analysis	6	1	-
Applied statistics	6	1	-
Statistical practice	7	1	-
Data analysis	5	1	-
General economics	15	4	1
Economics seminars	5	1	1
Problems and techniques of development	6	2	-
Enterprise accounting	7	2	-
Computer programming	6	2	-
Introduction to operations research	4	1	-
Sociology	4	1	-
English	4	1	1
Physical education	(5)	-	-
General assessment	3		
	100	22	4

1. The written tests in computer science will be the programmes realised during the year.

2. For physical education only, marks between 12 and 20 will be counted.

   - See remarks 1, 2, 3 at the end of the first year programme
   - The promotion from the second to the third year will be based on the same conditions as those applicable from first to second year.

TEACHING PROGRAMME - FIRST QUARTER

Subjects	Number of hours Teaching	Laboratory work
COMPULSORY COURSES		
1. Sampling theory and practice	30	15
2. Mathematics for economics	20	10
3. International economics	20	10
4. Administrative report writing	15	5
5. Case study	70	
OPTIONAL SUBJECTS	60	
OPTION A - COMPUTER SCIENCE	255	
A.6 Cobol	30	
A.7 Fortran language & operating system (O.S)	30	
OPTION B - MANAGEMENT		
B.6 Analytical accounting & financial management	20	10
B.7 Commerical law	15	5
B.8 Marketing	10	-
OPTION C - DEMOGRAPHY		
C.6 Analysis of defective data	60	
Political demography		
OPTION D - APPLIED STATISTICS		

A number of courses covering fifteen teaching hours dealing with economic and social statistics will be maintained each year depending on the needs expressed by user countries and the availability of the teachers.

D.6 Agricultural statistics	10	10
D.7 Industry, trade and communications statistics	5	5
D.8 Foreign trade statistics	5	5
D.9 Labour, price and household budget surveys	13	13
D.10 Statistical organisation	4	4

Note: The management of the school reserves the right to cancel the option(s) which might not gather a sufficient number of students.

KNOWLEDGE EVALUATION

"INGENIEURS DES TRAVAUX" BRANCH - THIRD YEAR

Subjects	Weight	
Sampling theory and practice	5	
Mathematics for economics	5	
International economics	5	
Administrative report writing	5	
OPTION A:		
Cobol		5
Fortran language & O.S. system		5
OPTION B:		
Analytical accounting		5
Commercial law		3
Marketing		2
OPTION C:		
Analysis of defective data	10	
Politics of demography		10
OPTION D:		
Agricultural statistics		2
Industrial statistics		2
Foreign trade statistics		2
Labour statistics		2
Statistical organisation		1
CASE STUDY		15
Appreciation of the practical work by the professor		10
PRACTICAL WORK		
Written report		10
Presentation by the students		5
TOTAL		70

In the first and second years there are also six oral and four written examinations during the year (25 written examinations in the first year and 22 in the second year).

It should be noted that:

i) The length of written tests is left to the discretion of the teacher but should fall within the range of one and half to three and half hours;

ii) The general assessment which is made at all levels takes into account all the work done throughout the year, the industriousness and general behaviour of the student;

iii) For physical education, only marks between 12 and 20 will be counted.

9.1.6 Examination regulations

To be promoted to a higher class, students must obtain a general average of at least 12 out of 20.

Apart from very exceptional cases such as long-term sickness, repeats of the preparatory year are not allowed.

A panel may agree to students whose average is between 10 and 12 repeating.

The final ranking of students is based on the general total of marks obtained throughout the three years' courses.

Students who in each of their years of study have achieved a general average of at least 12 out of 20 are awarded the diploma of ingénieur des travaux statistiques.

9.2 Adjoints techniques de la statistique

9.2.1 Duration of the course: Two years

9.2.2 Level of admission: Applicants must have attended one of the final classes in the science stream in high schools or colleges.

9.2.3 Number of places in 1984: 25

9.2.4 Use of time: The over-all break-down of the 1,070 hours of classes and supervised work during the two years' course is as follows:

Mathematics :	12 per cent
Statistics and demography:	43 per cent
Economics	18 per cent
Computer science	6 per cent
Miscellaneous	21 per cent

In the first year students also receive general education in mathematics and French. Descriptive statistics and economic accounts for 63 per cent of the time.

The second year is reserved for more practical training apart from 90 hours of statistical analyses and 50 hours of general economics. The other statistical courses are designed to inculcate the principles of applying statistics to various economic fields.

The last two months are reserved for practical work generally undertaken in the context of the school's activities (actual work, training in the field or processing of a statistical survey). It may, however, also take place in the department of statistics or other statistical or technical services of the public or private sector.

9.2.5 Assessment

Students sit 20 written examinations and four oral examinations in the first year. An assessment is also made every week in the second year when there is an average of 10 written and three oral examinations.

The length of written examinations is left to the discretion of the teacher but should range from one and half to three and half hours. A general assessment (weight 9) is made of all the work done during the year and takes into account the industriousness and the general behaviour of the students.

9.2.6 Examination regulations

The general average required to pass the different examinations at the end of the academic year is 12 out of 20. Only the examiners are empowered to take decisions on students repeating years.

Students who at the end of their studies have obtained a general average of at least 12 out of 20 are awarded the diploma of adjoint technique.

9.3 Agents techniques and 'continued training'

9.3.1 Duration of course: 1 year

9.3.2 Level of admission: Candidates should have had five years of schooling in high schools or colleges.

9.3.3 Number of places in 1984: 25

9.3.4 Use of time: The total number of hours spent in the classroom and on supervised work is around 466, broken down as follows:

Statistics and demography:	60 per cent
Mathematics :	7 per cent
Economics :	7 per cent
Practical work :	11 per cent
Miscellaneous :	15 per cent

Subject	Number of hours Classes	 Supervised work
A. GENERAL EDUCATION	80	40
1. Mathematics	20	10
2. French	40	20
3. Economic geography	20	10
B. STATISTICS	148	133
4. Statistical methods	73	53
5. Statistical organization	30	30
6. Price, labour and household budget statistics	20	20
7. Demography	15	20
8. Agricultural statistics	10	10
C. MISCELLANEOUS	15	50
9. Introductory economics and economic accounting	15	50
	243	223

For the practical work, which lasts one month at the end of the course, students participate as enumerators in a field operation organized by the administration of the school. During the practical work they are introduced to the various problems encountered in the collection of statistical data in Africa.

9.3.5 Assessment

Subject	Weight	Average number per year of Written examinations	 Oral examinations
Mathematics	5	1	1
French	10	2	1
Economic geography	5	1	-
Statistical methods	20	6	1
Statistical organization	10	2	-
Price, labour and household budget statistics	7	2	-
Demography	8	2	-
Agricultural statistics	3	1	-
Introductory economics and economic accounting	7	1	-
Physical education	(5)	-	-
Practical work	16	-	-
General assessment	9	-	-

Note: In physical education only, marks between 12 and 20 are counted.

9.3.6 Examination regulations

Students who obtain a general average of at least 12 out of 20 are awarded the diploma of Agent technique.

The Board of Teachers may decide on whether students whose general average is between 10 and 12 out of 20 should repeat.

Other activities: As from 1981, the school runs regional and international seminars, e.g. the seminar on agricultural surveys (July-August 1981). Also organized at the school at the demand of agencies and research institutes is practical work (e.g. ORSTOM in 1982).

10. Admission requirements

Admission to the "Ecole de statistique d'Abidjan" is open to all students who have submitted a full application form in time and who are successful in the competitive exam or who are admitted by the admission panel on the basis of their qualifications.

Candidates may be attending school in a Lycée and be 22 years old or less.

There are two admission systems for each section:

- Direct competitive exam
- Professional competitive exam

The latter is reserved for candidates who have professional experience in the public or private sector.

The applicant's file should contain the following:

1. Application
2. Curriculum vitae
3. Birth certificate
4. Copy of required diplomas or school certificates
5. Medical certificate
6. Stamps for the return of the file
7. A passport photo

The file should reach the school before 1 March.

The files of persons who are not nationals of the Côte d'Ivoire should be transmitted through the Department of Statistics of the applicant's country of origin.

11. Tuition fees

The tuition fees are as follows for the various levels of training:

Ingénieur des travaux statistiques : 45,000 CFA francs per month
Adjoints techniques de la statistique : 35,000 "
Agents techniques : 30,000 "

Payable over a period of nine months.

12. Fellowships

The school accepts only students with fellowships.

Fellowship applications are totally unrelated to students' admission applications or registration for the competitive entrance examinations.

The Government of the country of origin of the candidate may on its part grant a fellowship or submit a request to an aid agency such as UNDP, EEC, WHO, USAID, FAC or FAO. Around 90 per cent of the former students of ENSEA received fellowships from those agencies.

13. Living conditions for foreign students

Students are accommodated at the Cité Universitaire of Abidjan. The cost of rooms is 7,000 CFA francs (single) and 6,000 CFA francs (double) per month and each meal ticket costs 200 CFA francs. Begining 1985/1986 academic year, students will be accommodated at the "Centre national des oeuvres universitaires" (CNOU). According to the rules in force, transport is provided by the "Centre national des oeuvres universitaires".

With the assistance of the European Development Fund (EDF) and the Government, the construction of the school premises (without boarding) were completed in October 1986.

4. Intake and output

"Ecole nationale supérieure de statistique et d'économie appliquée"

	Academic year																		
	1977-78		1978-79		1979-80		1980-81		1981-82		1982-83		1983-84		1984-85		1985-86		1986
Programmes	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E
ngénieurs des ravaux statistiques																			
reparatory year	10	8	8	8	13	12	12	12	9	9	11	8	11	11	13	12	14	11	16
irst year	16	13	19	17	25	18	23	19	23	22	13	12	22	22	20	19	23	22	27
econd year	11	11	13	13	17	17	19	17	20	20	22	22	12	12	17	13	22	19	25
hird year	11	11	11	11	13	13	17	17	17	17	20	20	22	22	12	12	13	13	19
djoints techniques e la statistique																			
irst year	11	9	19	16	17	17	11	10	20	25	14	12	8	8	19	18	18	18	11
econd year	10	10	9	9	16	16	17	17	10	10	25	25	12	12	8	8	18	18	17
gents techniques	20	20	23	13	24	22	17	17	17	17	12	12	15	15	22	21	19	19	13

1. Country : France

2. Name of the Centre : Centre européen de formation des statisticiens économistes de pays en développement (CESD)

3. Attached to : l'Ecole nationale de la statistique et de l'administration économique (ENSAE)

4. Address : 3, Avenue Pierre Larousse
92240 - Malakoff, France
Telephone: 540-10-07

5. Name of the Director: Lamine Diop

6. Objective

The aim of the Centre européen de formation des statisticiens économistes des pays en développement (CESD-Paris) is to train high-level statistical cadres who in their countries will develop, manage and use statistical information for economic or social decision making at the national, regional or enterprise level. CESD also assists African statistical schools by organizing a common admission examination and sending teachers.

7. Historical background

CESD is a private association governed by the French law of 1 July 1901. It was founded in October 1962 by the Director General of the Statistical Office of the European Communities the Director General of the General Department for Overseas Development of the Commission of the European Economic Communities, the Director General of the Statistical Institutes of countries members of EEC, the Director of Cultural and Technical Co-operation of the French Ministry of Co-operation and the Director of the Ecole nationale de la statistique et de l'administration économique of France.

The association is managed by a Governing Council composed mainly of European members.

8. Academic staff

CESD operates in close colaboration with ENSAE. Around 70 per cent of the course are common to the two schools and are provided by teachers from ENSAE. For specifics subjects (around 30 per cent) the Centre calls on visiting teachers (a total of 15 for 430 hours or so) with experience in the problems and specific characteristics of the economies of developing countries. The academic staff of ENSAE consists of 12 permanent and 300 part-time teachers.

9. Teaching programmes

CESD prepares students for the diploma of ingénieur statisticien économiste which is awarded at the end of a high-level theoretical course.

9.1 Duration of course: The course lasts for three years.

9.2 Level of admission: The competitive entrance examination is open to students who have already several years of higher education (on average four) in mathematics or economics.

9.3 Number of places in 1986: 32

9.4 Allocation of time: Since students come from two different backgrounds, the first year of the course contains an economics option and mathematics option. The economics option is intended for students who have training in economics and the mathematics option for students with a scientific background. The aim of the training in the first year (economics option or mathematics option) is twofold.

Firstly to give students from the two backgrounds the suplementary training they require to follow common classes for the rest of the course and secondly, to give students an introduction to the basic subjects taught at the Centre.

First year: Economics option

- Mathematics	280	hours
- Statistics and probability	160	"
- Economics	100	"
- Computer science	40	"
- Languages	70	"

The mathematics syllabus consists of certain subjects which are covered in the analysis syllabus in the special mathematics class.

First year: Mathematics option

- Mathematics	135	hours
- Statistics and probability	155	"
- Economics	100	"
- Enterprise accounting	65	"
- Computer science	40	"
- Languages	70	"

The introduction to economics consists of a presentation of the main economic facts and institutions and a brief expose of analytical tools as well as lectures with commentaries on the economic and statistical problems of developing countries.

Second year

There are three groups of students in the second year. The first two groups are students in the economics and mathematical options from the first year. The second group comprises students admitted directly into the second year.

Course	Number of hours	Economics option	Mathematics option	Direct
Mathematics and statistics				
Algorithms	20	X		X
Mathematical statistics	90	X	X	X
Applied statistics	25	X	X	X
Descriptive statistics	15			X
Data analysis	20	X		X
Additional probability	15			X
Economics				
Economic theory	140	X	X	X
World economic system	45	X	X	X
National accounts	35	X	X	X
Public finance and budget	15	X	X	X
Other courses				
Survey processing techniques	20	X	X	X
Demography	40	X	X	X
Development sociology	25	X	X	X
Commercial law	15			X
Introduction to enterprise accounting	20			X
Financial analysis	15	X	X	X
Introduction to computer science	20			X
General computer science	15	X	X	X
Languages	70	X	X	X

Note: An X in the column means that the course is compulsory for the group of students in question.

The economic theory course covers micro and macro-economics

The mathematical statistics course covers statistical decision making, estimates, hypotheses testing, linear modelling and variance analysis.

Starting from the academic year 1987/1988, between the second and the third year, second year students are required to carry out practical work in an enterprise or administration of a developing country. In principle, this practical work takes place during the months of July, August and September prior to the third year and lasts for about ten weeks.

Third year

The third year consists of a common block of subjects and optional subjects.

A. Common block

Economic growth	25	hours
Data analysis	20	"
Econometrics	35	"
Sampling theory	45	"
Development economics	20	"
Project selection	15	"
Planning	15	"
Economics and international institutions	15	"
Stabilisation and growth	15	"
Agriculture and economic development	15	"
Simulation of annual forecast	50	"

B. Optional subjects

Econometrics and time series modules	110	hours
Analysis and statistical production modules	160	"
Computer science and operations research modules	155	"
Modelling and macro-economic politics modules	150	"
Industrial economics and applied micro-economics modules	205	"
Actuarial and finance modules	130	"

C. Group work .... 50 "

The common block of subjects are obligatory. Each student in addition selects a certain number of optional subjects from the various majors and may participate in group work.

Group work consists of studying one of the technical subjects offered at the Centre dealing with the economy of the third world. The studies are undertaken by groups of three to four students under the direction of a teacher who acts merely as a guide and adviser.

During the third year students frequently use the computers in the computer centre for the applied work.

9.5 Examination regulations

At the end of each course lasting three months or six months a written or oral examination is organized. For courses lasting one year, students sit two or three partial exams.

The average required to advance to a higher class or obtain a diploma is 12 out of 20.

Students are allowed to repeat a year only once during the course.

9.6 Academic year

School year begins early in October and ends on 30 June. An obligatory period of practical work of a minimum of 10 weeks is scheduled between the second and third years. Whenever financing is available, the practical work should be conducted on the African continent.

First year students should arrive about mid-September.

9.7 Research and post-graduate fellowships

Within the framework of agreements signed by ENSAE and some Universities of Paris, the students of CESD who have had a good attendance may be admitted to prepare simultaneously, during the third year, a Diplôme d'Etudes Approfondies (DEA).

Moreover, ENSAE is offering every year one or two research fellowships to the outgoing students in order to enable them to prepare for a doctorate degree.

10. Admission requirements

10.1 By diploma

The following students may be admitted by diploma in the first year (mathematics option):

- Holders of a Masters Degree in mathematics
- Holders of a diploma from a higher science school

The following students may be admitted by diploma in the first year (economics option).

- Holders of a Masters Degree in economics who have also passed a mathematics test designed to check the level of mathematics.

The following students may be admitted directly by diploma in the second year.

- Holders of a Masters Degree in mathematics or a diploma from a higher science school who also have a sound background in economics, calculus and the theory of probability.

10.2 By competitive examination

(a) The following may sit the competitive exam for admission to the Ingénieur statisticien économiste (ISE) course, mathematics option:

Students who have registered in a special mathematics class or students who have registered in the second year of a first degree course in mathematics at a university.

Applicants for the economics option should have registered in the fourth year of an economics faculty.

(b) Holders of the diploma of *Ingénieur des travaux statistiques* can also sit the ISE competitive exam in either the mathematics or the economics option.

10.3 Registration

The applicants should be at least 26 years old on the first January of the registration year. This age limit is raised to 35 years for candidates who are already working in the national statistical services.

Persons wishing to be admitted by diploma or by one of the CESD competitive examinations should fill out a registration form which is available from the local statistical service or the secretariat of CESD for applicants residing in Europe.

The form should be returned to the local statistical service by 31 January at the latest.

Applications for admission by diploma can be accepted up to 1 May inclusive, which is the cut-off date.

10.4 Competitive examination results

The competitive examinations for admission take place in the first half of May. The examination will be held in the capital of each of the countries concerned. There is also an examination centre at Malakoff.

The Panel which rules on admissions by diploma and by examination will meet by 30 June at the latest. Successful candidates are informed by letter by 10 July at the latest.

11. Tuition fees

The tuition fees were 14,000 French francs per year for the school year 1986-1987.

12. Fellowships

Admission to CESD does not automatically guarantee a fellowship and CESD can also accept students who do not have fellowship.

It is however up to the candidates, in conjunction with department of statistics or the Ministry of Foreign Affairs, of the civil service or of national education in their countries to fill out an application for a fellowship.

The Government in the candidate's country of origin may itself award a fellowship or submit the request to an aid agency.

Students admitted to CESD should preferably have a fellowship from EDS, FAC or the United Nations because the amount of some national fellowship is not sufficient to enable students be trained satisfactorily and in particular finance the practical work in Africa scheduled during the course.

13. Living conditions

CESD holds 10 rooms at the 'Cite Universitaire' and allocates them on a priority basis to first-year students whose financial resources are weak.

14. Intake and output

Table 1. Distribution of Ingénieurs des travaux statistiques graduates by year and by country

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	Total
Benin	-	-	2	-	1	-	-	-	1	1	-	3	-	-	3	11
Cameroon	3	1	3	3	-	7	7	6	14	3	1	1	4	3	-	56
Centrafrique	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Congo	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-	3
Côte d'Ivoire	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	2
Ethiopia	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Gabon	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Guinea	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Burkina Faso	-	1	-	-	1	-	-	-	-	1	-	1	-	-	-	4
Madagascar	1	3	7	8	8	1	2	4	1	-	6	1	-	1	-	43
Mali	-	2	1	-	1	2	1	1	4	6	12	2	2	1	2	37
Rwanda	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2
Senegal	-	1	1	-	-	2	2	-	-	-	-	2	6	1	1	16
Somalia	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	2
Chad	-	1	-	-	-	-	-	-	-	-	-	2	-	-	1	4
Togo	1	1	2	1	2	2	-	-	1	-	1	2	3	1	2	19
Zaire	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Total A	6	10	21	12	13	15	16	11	22	12	20	14	16	7	9	204
Algeria	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Cambodia	-	-	2	-	-	-	1	1	-	6	-	-	-	-	2	12
Morocco	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Tunisia	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2
Vietnam	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Total B	-	-	2	-	-	-	1	1	-	8	-	1	1	1	2	17
Grand total	6	10	23	12	13	15	17	12	22	20	20	15	17	8	11	221

Table 2. Distribution of "Ingénieurs Statisticiens Economistes" graduates of CESD by year and by country

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total
Benin	-	1	1	1	-	-	-	-	-	1	-	-	-	2	1	-	2	6	1	1	4	1	1	23
Burkina Faso	-	-	-	-	-	1	-	-	-	-	1	-	2	-	-	1	-	1	-	1	-	-	1	8
Burundi	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Cameroon	-	1	2	2	-	-	1	2	1	1	1	2	4	3	2	4	6	-	2	3	2	3	3	45
Centrafrique		-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	-	-	-	-	-	-	3
Congo	-	-	-	-	-	-	-	-	-	1	1	-	1	-	-	1	-	1	1	-	-	-	-	6
Côte d'Ivoire	1	1	-	-	1	-	-	-	-	-	1	-	1	2	1	-	3	2	4	1	1	2	1	21
Gabon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Guinea	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	1	2	-	-	6
Madagascar	-	2	-	2	-	-	1	-	1	-	1	1	1	-	2	-	-	-	2	3	-	1	1	18
Mali	-	-	1	-	2	-	-	-	-	-	3	2	2	1	-	2	-	4	2	-	-	2	1	22
Mauritius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	3
Mauritania	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	-	3	1	8
Niger	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2
Rwanda	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2
Senegal	-	-	1	-	1	1	1	1	1	-	1	2	1	1	1	4	2	3	4	2	1	1	-	29
Chad	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	2
Togo	-	-	-	1	1	1	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	2	3	11
Zaire	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
Total 1	2	4	5	7	4	3	3	3	7	3	9	10	14	11	8	14	15	17	19	15	11	16	13	213
Algeria	-	1	-	-	-	1	1	1	4	-	-	-	-	2	-	-	2	1	2	-	-	2	-	17
Cambodia	-	-	-	-	-	1	-	-	-	-	1	1	4	1	-	-	1	-	-	-	-	-	-	9
France	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	3
Lebanon	-	-	-	-	2	2	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	7
Morocco	-	-	3	-	7	1	2	1	4	1	2	-	-	2	-	-	1	-	-	1	-	1	3	29
Mexico	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Tunisia	-	-	-	-	-	-	-	-	-	-	-	-	4	7	2	-	1	2	1	2	1	1	2	23
Total 2	-	1	3	-	9	5	5	2	8	2	3	1	10	12	2	1	5	3	3	3	1	5	5	89
Grand total	2	5	8	7	13	8	8	5	15	5	12	11	24	23	10	15	20	20	22	18	12	21	18	302

Table 3. CESD, Paris: Enrolment (E) and Passes (P) from 1977 to 1986

	"Ingénieurs statisticiens économistes"					
	First year		Second year		Third year	
	E	P	E	P	E	P
Academic year						
1977-78	21	20	16	15	10	10
1978-79	26	21	21	20	15	15
1979-80	25	22	22	20	20	20
1980-81	19	18	23	22	20	20
1981-82	21	15	19	19	22	22
1982-83	23	18	15	12	19	18
1983-84	29	21	21	21	13	12
1984-85	36	27	21	18	21	21
1985-86	26	19	28	27	18	18

E = Enrolment

P = Passes

1. Country : Morocco

2. Name of the centre : Institut National de Statistique et d'Economie Appliquée (INSEA)

3. Attached to : Ministry of Planning

4. Address : B.P. 6217
Rabat, Morocco

5. Name of the Director: Mustafa Benyaklef

6. Objectives

The Institut National de Statistique et d'Economie Appliquée provides training for professional and middle-level staff in statistics, applied economics and information sciences for future employment in the Administration, semi-public agencies and the private sector. INSEA accepts foreign students as well as Moroccan students.

7. Historical background

INSEA was established initially as the Centre de formation des ingénieurs des travaux statistiques (CFITS) in December 1961 under the auspices of the Moroccan Government with the assistance of the United Nations Economic Commission for Africa. CFITS was changed into INSEA in April 1967 by Royal decree.

8. Academic staff

The policy which was introduced over ten years ago to train Moroccan teachers continues to be applied actively. The teaching staff comprises:

- Full-time teachers: 42 (Moroccans)
- Part-time teachers: 46
- Consultants : 3 (expatriate)

9&10 Teaching programmes and admission requirements

The INSEA is presently running eight (8) training courses in statistics and information science.

- The "Ingenieurs statisticiens Economistes (ISE)" course:
  . Option "Economic Analysis" (ISE)
  . Option "Information Science" (Ingénieur Informaticien (I.I.))
  . Option "Demography" (Ingénieur Statisticien-Démographe (I.S.D.)
- The Ingénieurs d'application de la statistique (IAS) course
- The Ingénieurs d'application de la statistique course for Arabic-speaking students (IASA)
- The Ingénieurs analystes informaticiens (I.A.) course
- The Adjoints techniques de la statistique (A.T.S) course
- The Adjoints techniques programmeurs (A.T.P) course

There is also an Actuary option in the IAS course.

a) Teaching methods

The instruction at INSEA comprises official lectures, practical work, seminars, other lectures and research work.

There are some 25 class hours a week for all courses except ISE which has 12 so as to enable students to work on individual research which is essential at this level.

Students' knowledge is continually checked through their homework or examinations where the ratings are taken into consideration for advancement to the next class and for the award of diplomas.

b) Academic year

The academic year begins on 15 September and ends towards the end of July for studies which include periods of attachment or thesis. It is divided into three terms of ten weeks each or two semesters of fifteen weeks each.

Students are given the university holidays established by the Ministry of National Education.

c) Teaching courses

i) Ingénieurs statisticiens économistes (ISE)

- Duration of course: 2 years
- Admission requirements: Admission is based on a competitive examinations open to candidates who have:
  - ingénieur d'application de la statistique diploma
  - a degree in economics or mathematics
  - a recognized equivalent diploma with at least three years' professional experience
- Number of places in 1986: 20
- Course content:

Students in the second year may choose between a statistics option and an economics option; a demography option is under study. Within each option specialization is offered (for example economic analysis, planning, sampling...)

First year: basic courses for all students (statistics, micro-economics, macro-economics, mathematics, econometrics, computer science).

Second year: courses taken depend on the option and specialization but includes common courses (project analysis, planning techniques) and specific courses (applied statistics, public economics).

The third term of the second year is devoted to a dissertation.

- Award: Studies lead to the award of the diploma of ingénieur statisticien économiste.

ii) Ingénieurs d'application de la statistique

- Duration of course: 4 years

- Admission requirements: Admission is based on a competitive examination open to students who have passed the baccalaureat in mathematics or science or hold a recognized equivalent diploma;

- Number of places in 1986: 120 of which 30 trainees study in Arabic the whole programme: IAS (67 of which 6 non-nationals): IASA (30 of which 1 non-national);

- Course content:

First year

Basic courses: descriptive statistics, probability, algebra, analysis and economics.

Subsidiary courses: Introduction to social science and guided readings.

Second year

Basic courses: probability, introduction to economic analysis, computer science and numerical calculus, money and banking.

Subsidiary courses: enterprise accounts, national accounts, sociology, languages (English).

Third year

Basic courses: statistical inference, operation research, micro-economics, macro-economics, demography.

Subsidiary courses: planning theory, management, report writing.

At the end of the third year, students are assigned practical work lasting about one month during June-July.

Fourth year

Basic courses: mathematical statistics, econometrics, sampling, planning techniques, data analysis, project evaluation, development economics.

Subsidiary courses: Economics of Morocco, development sociology;

Seminars: 6 on choice among a list. Territorial economics and decentralised planning, dynamic modelling for regional planning, forecasting, modelling. The use of Arabic language in the sciences and technology, history of arabic mathematics, non-parametric estimation...

Introduction to studies and research: students participate in study groups (4 to 6 students) of their choice which are led by research teachers (an average of two) for three hours a week and they produce a report of their studies and research at the end of the year.

- Award: studies lead to the award of the diploma of ingénieur d'application de la statistique.

iii) Adjoint technique de la statistique (ATS)

- Duration of course: 2 years
- Admission requirements: Admission is based on a competitive examination open to students who have completed the seventh year of secondary school in mathematics, science or economics.
- Number of places in 1986: 25
- Course content:

First year

Basic courses: statistics, mathematics, statistical analysis.

Subsidiary courses: information sciences, sociology, guided readings.

At the end of this year, during June-July, students are involved in practical work for about one month.

Second year

Basic courses: statistics, statistical computing, sampling, economic geographical, administrative and economic conditions, applied statistics.

Subsidiary courses: enterprise accounting, teachnical languages (English), economics of Morocco.

- Awards: studies lead to the diploma of adjoint technique de la statistique (ATS)

iv) Ingénieurs analystes informaticiens (IAI)

- Duration of course: 4 years

- Admission requirements: Admission is based on a competitive examination open to persons who have passed the baccalaureat in the science stream or economics.

- Number of places in 1986: 40

- Course content:

The first year covers the following:

Computer science: Introduction to computing, logic of programming, logical circuits, fortran, discrete mathematics.

Subsidiary courses: mathematics, statistical probability, technical English.

The second year covers:

Computer science: organic and functional analysis, numerical algorithms, structure of information, structure of computers, operating systems.

Subsidiary courses: technical report writing, economics, entreprise accounting and management and technical English, mathematics.

The third year covers: methods analysis and programming techniques for compilation of data, micro-computing, numerical algorithms, data base.

Subsidiary courses: data analysis, management, Moroccan economics, English, operations research.

Fourth year:

Basic courses: concept analysis, programming language, "téléinformatique"

Subsidiary courses: simulation introduction to social sciences,

Seminars: four seminars to be chosen from a list which includes e.g. installation of a computer centre, artifical knowledge and expert system, data base, documentary computing, choice of micro-computers, study of a multiplan table.

Practical work during the second semester (February to June) in a computer centre leading to a writing of a thesis.

Awards: studies lead to the award of the diploma of ingénieur analyste.

v) Adjoints techniques programmeurs

- Duration of course: raised from 1 year to 2 years since October 1983.

- Admission requirements: admission is based on a competitive examination open to students who have duly completed the seventh year of secondary education in the science or economics streams.

- Number of places in 1986: 20

- Course content:

The course covers:
Computer science (general)
Introduction to computer science
Programming language
Organic and functional analysis
Operating systems
Indexing systems
Case studies
Components of computers and assemblers
Programming techniques
Fortran
Cobol
Micro-computing

Subsidiary courses

Mathematics
Statistics
Enterprises accounting and management
English
Economics
Seminars (2) of 15 hours each
Technical report writing

11. Fees

-

12. Fellowships

-

13. Living conditions

-

14. Intake and output

Enrolment (E) and Passes (P) in 1984/85 and 1985/86

Programmes(1)	1984-1985		1985-1986	
	Intake	Output	Intake	Output
I.S.E.	23	21	17(x)	15
I.A.S.A.	54	40	63	59
I.A.S.	179	141	234	154
I.A.	132	114	132	110
A.T.S.	79	66	76	70
A.T.P.	32	26	39	36

(1) I.S.E. = Ingénieur statisticien-économiste
I.A.S. = Ingénieur d'application de la statistique
A.T.S. = Adjoint technique de la statistique
I.A. = Ingénieur analyste
A.T.P. = Adjoint technique programmeur

(x) Including foreign students

1. Country : Rwanda

2. Name of the centre : Institut africain et mauricien de statistique et d'économie appliquée (IAMSEA)

3. Attached to : -

4. Address : P.O. Box 1109
Kigali (Rwanda)

5. Name of the Director: Idrissa Guira

6. Objectives

The "Institut africain et mauricien de statistique et d'économie appliquée" (IAMSEA) has three objectives namely:

1. Training and education
2. Further training
3. Research

Therefore, the Institute aims to train statisticians in general statistics and more specifically study of economics, suited to:

a) collection and use of statistical information;

b) study and analysis of all economic document;

c) Planning and implementation of survey programmes, processing and analysis of their results;

d) preparation and use of the economic accounts and development programmes;

e) organisation, control and management of a department of statistics or economic planning.

Presently, IAMSEA is training only at the level of "Ingénieurs des travaux statistiques". Students are recruited among the nationals of the eight member States (Bénin, Burkina Faso, Central Africa Republic, Côte d'Ivoire, Niger, Rwanda, Senegal and Togo). Also admitted are students from the three countries which have requested and obtained the status of a privileged user countries of IAMSEA. These countries have the same rights as the States members of that Organization. These countries are: Congo, Gabon and Mali.

However, IAMSEA also accepts students from French-speaking African and Indian Ocean countries namely, Burundi, Chad, Comoros, Djibouti, Mauritania, and Zaire.

7. Historical background

The "Institut africain et mauricien de statistique et d'économie appliquée" was founded on 16 December 1975 in pursuant of the resolution No. 44/AEFT/Bangui/74 of the summit of Heads of State and Government of the African and Mauritian Common Organization (OCAM) concerning the transfer to Kigali, Rwanda, of the training of ingénieurs des travaux statistiques which was then offered at the "Centre européen de formation des statisticiens économistes des pays en développement (CESD)" in Paris.

IAMSEA is administered by a governing council composed of:

i) The Ministers of member States or their representatives, with each State having one vote.

ii) One representative of the teaching staff.

iii) One representative of the students.

Representatives of French co-operation, EDF, INSEE, CESD and ECA participate in the governing council as observers, one representative for each agency.

8. Academic staff

The French Government, through the "Fonds d'aide et de coopération (FAC)", and the Commission of the European Communities through the European Development Fund, finance full-time teaching posts. IAMSEA began the Africanisation of its teaching staff during the 1982/1983 academic year. The salaries of its full-time African lecturers are met by the contributions of the IAMSEA States members.

9&10 Teaching programmes and admission requirements

i) Duration of the course: three years to which one preparatory year is added for certain candidates as shown on paragraph 9.2 below;

ii) Admission requirements: admission is exclusively by competitive examination, admission by qualifications being excluded. The examination is the same as that for the Yaounde and Abidjan centres. It is co-ordinated by CESD, Paris.

Those who may sit the examination are:

a) Candidates who have the series C, D or E (scientific) baccalaureat or other equivalent diplomas;

b) Candidates in the final year of preparation for the series C, D or E baccalaureat, their admission is subject to their obtaining the series C, D or E baccalaureat by the time courses start at the Institute;

c) Candidates who have the diploma of "adjoint technique de la statistique".

A preparatory year has been introduced since the 1978-79 academic year. Admitted to the preparatory year are candidates who have sat the ITS entrance examination and who have obtained marks slightly lower than the pass mark for admission to the first year. The selection is made with priority being given to candidates from countries which have few statisticians and candidates holding the diplome of "adjoint technique".

iii) Number of places offered each year since 1985: 40

iv) Teaching programme (allocation of time) and 1986/87 weighting system.

Preparatory year

Title of courses	Number of hours	Weight
Mathematics	230	39
Seminars	30	5
Introduction to economics	90	15
English	50	8
Statistics	60	10
Probability	60	10
Field project	-	8
General assessment	-	5
T O T A L	520	100

First year

Title of courses	Number of hours	Weight
- Department of Economics	210	24
Introduction of economics	60	7
History of economics	20	3
Economics seminar	30	4
Introduction to accounting (including case study 20h)	40	5
National accounts (including case study 30h)	40	5
Economic game (case study)	20	-

Title of courses	Number of hours	Weight
- Department of mathematics	270	30
Mathematics	180	20
Probability	90	10
- Department of statistics and computer science	150	29
Descriptive statistics	90	10
Computer science	30	4
Field project	2 weeks	11
Statistical practice and survey preparation	30	4
- Miscellaneous	90	17
English	50	6
Techniques of written and oral expression	20	3
Introduction to sociology	20	3
General assessment	-	5
T O T A L	720	100

Second year

Title of courses	Number of hours	Weight
- Department of Economics	250	33
Economic analysis	70	9
Monetary and international economics	30	4
Advanced national accounts	50	6
Economics of development	50	6
Public finance	20	4
Financial analysis and management	30	4
- Department of mathematics	190	23
Mathematics	50	6
Operational research	30	4
Calculus of Probability	60	7
Mathematical statistics	50	6

Title of courses	Number of hours	Weight
- Department of statistics and computer science	200	29
Descriptive demography	40	5
Computer science	30	4
Descriptive statistics	30	4
Sampling theory and practice	50	6
Survey preparation	50	10
Field project	2 weeks	-
- Miscellaneous	70	15
English	50	6
Development sociology	20	4
General assessment	-	5
TOTAL	710	100

Third year

Title of courses	Number of hours	Weight
Theoretical courses		
- Department of economics	70	19
Planning	30	8
Projects study	40	11
- Department of mathematics	40	10
Data analysis	20	5
Econometrics	20	5

Title of courses	Number of hours	Weight
- Department of statistics and computer science	220	63
Computer science	30	8
Socio-economic household surveys	20	5
Transport and communications statistics	10	3
Agricultural statistics	20	5
Health statistics	10	3
Education statistics	10	3
Employment statistics	10	3
Foreign trade statistics	10	3
Industrial construction and public work statistics	20	5
Case study on applied statistics	50	17
Organization of a statistical service and administrative management	10	3
Analysis of survey results	20	5
- Miscellaneous	-	5
General evaluation	-	5
TOTAL	330	97
Practical work	4,5 months	97

11. Tuition fees

The tuition fees are set at 80,000 Rwanda francs i.e. approximately US$800 per year.

12. Fellowships

Students at IAMSEA generally receive fellowships from the European Development Fund (EDF) or the "Fonds d'aide et de coopération" of the French Republic (FAC), or from specialized Agencies of the United Nations system or from their countries. Applications for EDF or FAC or UN fellowships are usually sent by the relevant authorities of the candidate's country of origin through the normal channels. The EDF and FAC fellowships have a harmonized and uniform rate. The national fellowships rates vary according to the country.

13. Living conditions for foreigners

For the time being IAMSEA is located in the premises of the former official College of Kigali which comprise a dormitory with 72 rooms, a canteen and an entertainment room. Students have a bus for group travel organized by the Institute. Since 1981 there has also been a social and sports club (GAS) at IAMSEA which looks after the extra curricula aspects of the Institute from the socio-cultural and sports points of view.

14. Intake and output

Table 1: Distribution of students by year and by country for the academic year 1986/1987

Country	3rd year	2nd year	1st year	Preparatory year	Total
Member countries	21	26	15	8	70
Benin	6	5	1	-	12
Burkina Faso	2	5	1	1	9
Central African Rep.	-	1	1	-	2
Niger	1	1	4	4	10
Rwanda	11	8	8	3	30
Senegal	1	3	-	-	4
Togo	-	3	-	-	3
Other countries	4	10	8	10	32
Burundi	-	-	1	-	1
Comoros	-	-	2	-	2
Congo	-	4	2	7	13
Djibouti	1	-	1	-	2
Gabon	-	2	1	1	4
Madagascar	-	3	-	-	3
Mali	-	-	-	2	2
Mauritania	-	1	1	-	2
Zaire	3	-	-	-	3
Total	25	36	23	18	102

Table 2:

IAMSEA, Kigali : Enrolment ( ) and Passes (P) from 1978 to 1987

	Academic year																	
	1978-79		1979-80		1980-81		1981-82		1982-83		1983-84		1984-85		1985-86		1986-87	
Programmes	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
Ingénieurs des travaux statistiques																		
Preparatory year	9	9	7	7	9	9	10	10	3	3	10	9	13	13	8	8	18	
First year	24	23	20	19	23	23	24	24	20	19	31	30	27	26	36	34	23	
Second year	26	24	25	25	19	19	23	23	24	23	20	19	31	31	26	24	36	
Third year	19	19	24	23	26	26	19	17	25	24	24	22	20	20	31	30	25	
TOTAL	78	75	76	74	77	77	76	74	72	69	85	80	91	90	101	96	102	

1. Country : Senegal

2. Name of the Centre : "College Statistique"

3. Attached to : "Ecole nationale d'Economie appliquée (ENEA)"

4. Address : Route de Ouakam
B.P. 5084
Dakar, Senegal

5. Name of the Director: M'Diagne Ndiaye

6. Objective

The "College statistique" provides training to "ingénieurs des travaux statistiques (ITS)" and "agents techniques de la statistique (ATS)". Apart from Senegalese students, the centre also admits students from the Sahel countries.

7. Brief historical background

At the request of the "Direction de la statistique", the "College statistique" was established on 3 May 1966 by decree No. 66-394. Up to 1973, it used to train "adjoints techniques de la statistique" admitted into the college through direct or professional competitive examinations. The direct examinations were open to Senegalese holding "DTPC" or equivalent certificates, while the professional examinations were taken by workers from state institutions who had at least four years practical experience. This system was applied to two batches of twelve graduates, each with four years training.

In view of the high number of holders of "baccalaureat", the level of admission requirement was raised in 1974.

From that date, the competitive examination was open to Senegalese holding a "baccalaureat series" C and E with two years training. The graduates of the College are therefore known as "Techniciens superieurs de la statistique". This system was applied only to one batch of twelve students because the College was immediately faced with two problems:

- First, the "Direction de la statistique", the main user of the trained statisticians, was employing "Ingénieurs des traveaux statistiques" who completed from the schools in Paris and Abidjan, classified by the Senegalese Public Service as equivalent to holders of baccalaureat and three years training. The "techniciens superieurs" therefore constituted an intermediary group between the "ingénieurs" and the "adjoints techniques", and this was not desirable.

- Then, there was a major problem of stalemate at the level of the training of professionals, as a result of the raising of the level of the entry requirement. Thus, in 1975 it was decided:

- to raise the training period of "techniciens superieurs" to three years and to call the future graduates "ingénieurs des travaux statistiques";

- to establish a lower division for the professionals and students holding brevet or an equivalent certificate. Those qualifying would be called "Agents techniques de la statistique".

It should be noted that there was a further change in the training period within this division. From one year in 1975, the training period was raised to 2 years for the second and third batches, and then, to 3 years with effect from 1980. That change became necessary to reduce the wide gap existing between the "ingénieurs" and the "agents techniques" resulting from the absence of training of "adjoints techniques".

8. Academic staff

The permanent staff of the College comprise 3 (three) lecturers including 2 Senegalese (one of them is the Director) and a statistician from INSEE.

The visiting professors, numbering about thirty, are lecturers from the University of Dakar (30%) and officials specialised in the subjects taught (20%).

Besides, the permanent staff will include, as from the 1987/1988 academic year, another lecturer currently being trained in the United States.

9. Organisation of training

The training offered at the "College statistique" includes lectures, practical field work of the courses. The college runs two cycles of courses:

- the cycle of "Ingénieurs des travaux statistiques"
- the cycle of "Agents techniques de la statistique"

9.1 Cycle of "Ingénieurs des travaux statistiques

9.1.1 Duration 3 years

9.1.2 Teaching programme

First year

Training during the first year covers:

- Basic courses in mathematics, probability, descriptive statistics, general economics, computer science, demography, national accounting;

- Special courses directed towards sociology, English, administrative law, economic geography, enterprise accounting, techniques of expression, history of facts and economic thought;

- Finally, courses centred on research in statistics and introduction to "Methodology of statistical surveys".

Second year

Training is based on:

- Other basic subjects, such as mathematical statistics, operational research, planning, development economics, practical computer science with the use of software packages, demography;

- Other specific courses such as Cartography, Administrative writing, Accounting, English, Foreign trade, Economic reports;

- Finally, a course entitled "Processing of a statistical survey".

Third year

Training during the third year is devoted to applied statistics.

- Basic courses are: theory of sample surveys and econometrics;

- The special courses centred on applied statistics: prices, finance, education, health, agriculture, labour and employment, industry, domestic trade and transport, budget-consumption. The following subjects are also taught: marketing, projection and forecast, organisation of a statistical service. For each of these courses, emphasis is placed on the definition of concepts, calculation and interpretation of indicators;

- Finally, a special course entitled "Data Analysis".

The break-down of the hours according to discipline and year is as follows:

Subject	Number of hours		
	First year	Second year	Third year
Data analysis	-	-	30
English	30	30	30
Cartography	-	30	30
Calculus of probability	60	-	-
Enterprise accounting	-	30	30
National accounting	-	60	-
Projection and forecasting	-	-	30
Demography	60	60	-
Administrative law	-	30	-
Development economics	-	60	-
Econometrics	-	-	60
General economics	60	-	-
Economic reports	-	-	30
Management	-	-	30
History of economic thought	30	-	-
Computer science	-	60	60
Marketing	-	-	30
Mathematics	120	-	-
Methodology of survey	30	-	-
Organisation of statistics service	-	-	-
Operations research	-	30	-
Planning	-	60	-
Sociology	-	30	-
Agricultural research	-	-	30
Foreign trade statistics	-	-	30
Descriptive statistics	90	-	-
Education statistics	-	-	30
Financial statistics	-	-	30
Industrial statistics	-	-	30
Mathematical statistics	-	120	-
Price statistics	-	-	30
Health statistics	-	-	30
Labour statistics	-	-	30
Theory of sample surveys	-	-	60
Techniques of expression	-	30	-
Total	480	630	660

In addition to this time table students are also sent for training in the national service to further their knowledge. This course always takes place in July, August and September during the first and second years of training. At the end of each course, the students are expected to write a thesis which they leave at the College. In the third year the theoritical training lasts 6 months and the remaining 5 months are devoted to the preparation and presentation of a thesis before the award of the ITS certificate.

9.2 Cycle des agents techniques de la statistique

9.2.1 Duration: 3 years

9.2.2 Teaching programme

In most cases, the teaching programme for the "agents techniques" is the same as that for the ITS but the standards differ. All the subjects which require high level mathematics are cancelled. Thus,

- The mathematics programme is spread over 3 years corresponding to the levels of "seconde, première and terminale C respectively during the first, second and third years of training;
- In the field surveys, the role of the "agent technique" is geared much more to execution than planning.

The teaching hours are broken down as follows, according to subjects:

Subject	Number of hours		
	First year	Second year	Third year
English	30	30	30
Cartography	-	30	30
Probability	60	30	-
Enterprise accounting	-	30	30
National accounting	-	60	-
Demography	30	60	-
Administrative law	-	30	-
Development economics	-	60	-
General economics	60	-	-
Economic reports	-	-	30
History of economic thought	30	-	-
Informatics	-	60	60
Mathematics	100	30	60
Survey methodology	30	-	-
Planning	-	60	-
Sociology	-	30	-
Agricultural statistics	-	-	30
External trade statistics	-	-	30

Subject	Number of hours		
	First year	Second year	Third year
Descriptive statistics	60	-	-
Education statistics	-	-	30
Industrial statistics	-	-	30
Price statistics	-	-	30
Financial statistics	-	-	30
Health statistics	-	-	30
Labour statistics	-	-	30
- Techniques of expression	-	30	-
Total	460	590	400

10. Admission requirements

10.1 Cycle des ingénieurs de travaux statistiques

The "College statistique" organizes a direct competitive examination and a professional competitive examination for Senegalese candidates.

The direct competitive examination is open to holders of "baccalaureat série scientifique" (C, D or E) who fulfil one of the following conditions:

- To be eligible to sit for the competitive examination candidates must be recommended to ENEA by the Commission nationale d'orientation (National Guidance Commission).

- They must prove that they have not registered at the University. The professional competitive examination is open to candidates who:

  . hold diplôme d'agent technique de la statistique awarded by the 'College statistique de ENEA or any other equivalent:

  . have at least 2 years of professional experience:

  . are at most 30 years old.

The college also admits, after special test, student proposed and fully sponsored by private companies, semi-private companies or international bodies.

10.2 Cycle of Agents techniques de la statistique

For this cycle, the College statistique organises also a direct and professional competitive examination for Senegalese candidates.

The direct examinations are open to those aged between 16 and 26 and hold a Brevet de fin d'etudes moyennes (BFEM) or any equivalent certificate.

The professional examination is open to officials with at least 4 years practical experience in State institutions and aged at most 50 years.

Similarly, the College admits, after a special test, nationals put forward and fully sponsored by private or semi-private institutions or international organisations.

10.3 Foreign nationals

The college admits into the two cycles, foreign nationals who have passed a special test and:

- have been put forward by countries, private or international organisations;
- have been fully sponsored by these countries or organisations;
- are holders of a "brevet de fin d'etudes moyennes" or have a professional experience of at least 2 years (in the case of candidates entering the ATS cycles);
- are holders of baccalaureat "serie scientifique" or any other equivalent certificate, or a diploma of "adjoint technique de la statistique" (in the case of candidates entering the ITS cycle).

11. Fees

11.1 Senegalese students sponsored by the State

In the case of this category of students, the Senegalese state bears the total financial burden of their training.

As regards the "agents techniques", the expenses comprises only the study grants and training allowance amounting respectively to CFA Frs. 17,500 a month and CFA Frs. 700 a day. In the case of students who have passed the professional competitive examination, they preserve their salary and are also paid per diem for practical training.

As for the "ingénieurs de traveaux statistiques", they are given full scholarship by the state, at a monthly rate of CFA Frs. 24,000, with the State of Senegal paying other tuition fees.

11.2 Foreign students

Foreign students admitted to ATS and ITS cycles are either sponsored by their countries or a donor agency. The amount of the scholarships should cover the following:

- Tuition fees	CFA Frs. 300,000	per annum
- Boarding fees	CFA Frs. 280,000	"
- Clothing	CFA Frs. 175,000	"
- Stationery	CFA Frs. 40,000	"
- Monthly stipend	CFA Frs. 30,000	"
- Training allowance	CFA Frs. 2,000	"
- Books allowance	CFA Frs. 25,000	"
- Medical insurance	CFA Frs. 136,000	"

12. Fellowships

(see paragraph 11 above)

13. Living conditions

Senegale students admitted to the "cycle des agents techniques" must be day students. Those admitted to the ITS cycle must be boarders.

Boarding is compulsory for foreign students admitted to both "cycle des agents techniques" and "cycle des ITS".

The students are lodged in ENEA new boarding house in rooms fitted with two beds. The complex comprises 7 storeys with 14 rooms each (7 on the ground floor, 7 on the first floor), an assembly hall, a lecture room with a seating capacity of 140, a library and a hostel. The classrooms, the offices, the workshops, the dining hall, the clinic, the printing room and the audio-visual room are housed in other premises a few metres away from the complex.

14. Intake and output

E: Total number of enrolled students
S: Successful students

- Adjoints techniques

First batch (1966/67 to 1969/70) : E = 15 S = 14

Second batch (1969/70 to 1972/73): E = 13 S = 12

- Techniciens supérieurs

Third batch (1973/74 - 1974/75): E = 13 S = 12

- "Ingénieurs des travaux"

Fourth batch (1975/76 to 1977/78) : E = 15 S = 14
Fifth batch (1978/79 to 1980/81) : E = 14 S = 14
Sixth batch (1981/82 to 1983/84) : E = 25 S = 24
Seventh batch (1984/85 to 1986/87) : E = 24

- "Agents techniques"

First batch (1975/76) : E = 21 S = 20
Second batch (1976/77 to 1977/78) : E = 14 S = 13
Third batch (1978/79 to 1979/80) : E = 21 S = 20
Fourth batch (1980/81 to 1982/83) : E = 26 S = 24
Fifth batch (1983/84 to 1985/86) : E = 15 S = 14

Country	Already trained	Under training
Burkina Faso	3	3
Cape Verde	2	2
Guinea Bissau	-	2
Mali	1	1
Mauritania	3	3
Niger	1	3
Senegal	41	8
Chad	3	2
Total	54	24

Number already trained or under training

Course	Senegalese	Foreigners
"Agents techniques"	94	-
"Adjoints techniques"	24	-
"Techniciens superieurs"	12	-
"Ingénieurs des travaux"	49	29

15. Funding agency

The State of Senegal bears all the costs of equipment and operation of the College.

16. Link with other institutions

The Sahel Institute has financed the training of non-Senegalese students. However, it has never assisted in financing some of the training activities of the "College statistique".

Each year, CESD of Paris sends a number of text books or catalogues to the College. Besides, in 1983, the French Ministry of Co-operation donated to the College, a micro computer (SILZ 16) which unfortunately has never worked.

20. Research activities

Owing to lack of special facilities, research work is conducted in collaboration with some Ministries (planning of statistical surveys, execution, processing and analysis of results).

The recent research was conducted on:

- assessment of the sanitary and demographic situation in Senegal.
- participation of parents in the education of their children in primary schools.
- evaluation of the problems of training and assessment of ENEA.
- survey on the structures and exploitation of the handicraft in the urban areas of Senegal.
- A study on "farming in the Bambey Department" which should highlight the structure and the social organisation of farming, its means of production and its problems. This study was planned and carried out by ITS students under the supervision of the staff of the College and an FAO expert with special financial support from this organisation.

ASSOCIATE CENTRES

1. Country : Federal Republic of Germany

2. Name of the Centre : Munich Centre for Advanced Training in Applied Statistics for Developing Countries

3. Attached to : Carl Duisberg Gesellschaft e.v

4. Address : Munich Centre for Advanced Training in Applied
Statistics for Developing Countries
Pfalzer-Wald-Strabe 2
800 Muenchen 90
Federal Republic of Germany

Telex: FZMU d 5213696
Telegraphic Address: Cedere Munchen
Telephone: 089/68 20 97

5. Name of the Director: Dr. Dieter Borchers

6. Objectives

Training of statisticians from developing countries in:

(a) Practical application of statistical methods to provide solutions for specific problems to developing countries;

(b) The brush up of theoretical knowledge of Demographic, Economic and Social Statistics as well as their application;

(c) Instruction in new methods which have been developed since the participants completed their academic education.

7. Brief historical background

The Munich Centre was inaugurated in 1973. Since 1973 two courses each of four months duration (one in English and one in French) have been given, each year. Since 1977 short term seminars meant for Directors of Statistical Offices were organised at irregular intervals. Since 1980, the Munich Centre implements country courses in co-operation with national or regional institutions as well.

8. Professional staff

Thereeare three professional staff.

9. Teaching programmes

(a) Courses: These are of 4 months duration and are conducted in Munich. The topics vary depending on the priorities shown by Statistical Offices. Examples of topics offered are: Agricultural Statistics, Industrial Statistics, Statistics of Foreign Trade and Balance of Payments, National Accounts, Demographic Statistics and Social Statistics.

(b) Seminars: These are of two weeks duration and are conducted in Munich. Different aspects of the management of Statistical Offices are covered.

(c) Country courses: These are of two to five weeks duration and are conducted in a developing country. The topics chosen vary depending on demand.

In view of the varying topics which the Munich Centre offers, the centre relies on guest lecturers from Statistical Offices in Germany, other European countries, developing countries and International Organisations.

10. Admission requirements

A University degree or a University diploma or equivalent.

11. Fees

No tuition fees are charged by the centre.

12. Fellowships

Fellowships may be obtained from the Commission of the European Communities, the Federal Ministry of Economic Co-operation of Germany (via the German Embassy), UN-organizations and other sources.

13. Living conditions

Participants on the courses are hosted in the centres individual apartments which include bathroom and kitchen facilities.

14. Intake and output

See item 18.

15. Sponsors or funding agencies

The centre is funded jointly by the Federal Ministry of Economic Co-operation of Germany (BMZ) and the Commission of European Communities.

16. Link with other Institutions

The Centre has a link with the following institutions:

(a) Centre européen de formation des statisticiens economistes de pays en développement (CESD), Paris;

(b) Eurostat;

(c) German Statistical Service·

(d) Institut national de la statistique et des études economiques (INSEE), France;

(e) The British Statistical Service and the Overseas Development Administration(ODA)

(f) International organisations like United Nations Statistical Office, FAO, UNIDO, etc.

17. Language(s) of instruction

There are two languages of instruction, namely English and French.

18. African countries served

Nearly all African countries have sent up to now fellows to the Munich Centre. There is no country quota.

19. Facilities available

The Centre has a library, two computer rooms with ten independent powerful micro-computers. Health services are provided by doctors situated near the Munich Centre.

20. Research activities

The Centre does not undertake regular research due to limited resources.

21. Consultancy/Advisory services

The Centre does not undertake regular consultancy service but will do so on request if financing is secured. The Centre undertook a consultancy project once in connection with two German professors on the use of micro-computers in statistical training centres in Africa.

22. Student follow-up programmes

Sever methods are used inorder to maintain contact with former fellows of the Munich Centre.

(a) Publications: Twice in a year an edited bulletin serves a medium to maintain contacts with the fellows.

(b) Follow-up seminars: During 1983 a follow-up seminar was organized in Dar-es-Salaam bringing together former fellows from Tanzania and Malawi.

(c) Informal contact: Informal contacts with new participants in Munich serves to get information on former participants.

(d) Course evaluation: An evaluation is implemented in a form of regular questionnaires on lectures, subjects and also by a final detailed questionnaire at the end of each course.

23. Technical co-operation programmes

1. Country : The Netherlands

2. Name of the Centre: The Institute of Social Studies (ISS)

3. Attached to : The Institute is an independent institution of higher education

4. Address : Institute of Social Studies
Badhuisweg 251
2597 JR
The Hague, The Netherlands

OR

P.O. Box 90733
2509 LS The Hague
The Netherlands

Telephone: 070/502321
Cables: SOCINST
Telex : 31491 ISS NL

5. Name of the Director : -

6. Objectives

The objective of the training programme is to teach policy oriented programmes that relate to current needs and which complement rather than duplicate courses and workshops offered in Third World countries. The teaching programmes seek to combine institutional and individual approaches and are focussed upon policy oriented study and training in development and change of societies, economics and policies.

7. Brief historical background

The Institute was founded in 1952 by the joint Universities of the Netherlands and is a post-graduate centre for the study of problems of development and guided change. The Institute was established as an independent institution of university education in accordance with article 144 of the Scientific Education Act of the Netherlands. The Institute is governed by a Board of Trustees whose members are appointed by the minister of Education.

The Institute offers a variety of post-graduate courses and workshops. The work of the Institute comprises teaching programmes, policy oriented research, projects and advisory services. It aims at contributing to national and international efforts to understand and solve problems related to the development process. It also helps in the evolution of policy skills and techniques that are needed for the solution of these problems.

Up to September 1982, 3250 participants from 112 countries took part in the Institutes programmes. The participants came from a great variety of academic and carreer backgrounds, usually having worked for a number of years prior to turning to ISS for further studies either in their specialized field or in another that complemented their need at the time.

8. Professional staff

There are 64 full-time staff and 4 part-time staff.

9. Teaching programmes

Degree programmes

(a) MA (development studies): The duration of the course is 15 months and is purely a course - work-based programme of study. The course is primarily intended for further professional training in development studies and development planning and is designed mainly to meet the needs of those who have acquired some three years public or private sector professional experience after their first degree. The structuring of the programme is as follows:

- A general course systematically dealing with a number of general themes in the field of development studies.
- Basic course providing participants with a basic introduction to methodology in the social sciences and to disciplines with which they are not familiar but of which they need to know more before they can tackle through a multi-disciplinary approach, the specific issues in the field of study on which they wish to concentrate.
- Specialisations i.e. specific problem-oriented study programmes participants would like to devote most of their attention during their stay at the Institute. Each specialisation consists of a core-course and sub-specializations. The courses consist of the following:

  Economic policy and planning
  Agricultural and rural development
  Regional development planning
  Women and development
  Labour and development
  Politics and development strategies
  Public policy and administration

(b) Ph.D (Development studies): This programme was introduced in January 1983 and provides inter-disciplinary, policy oriented setting in which scholars in the field of development studies may meet requirements for a doctorate degree. The programme consists solely of activities related to the writing of a doctoral thesis. Candidates will be supervised by ISS staff members and of other universities. ISS will support them for a maximum of 30 months.

Diploma programmes

These are of shorter duration and more specific in aims and content with regard to vocational and training needs. The programmes are intensive and are designed for those who can only be released from their regular employment for a six month period. Diploma work is not preparatory to the ISS degree programme and diploma participants will not normally be considered for a degree in the following year.

Diploma courses offered in 1985/86 academic year are:

Development planning techniques
International relations and development
Rural policy and project planning
International Law and development
Communication policy and planning
Development, Law and social justice

Policy workshops and seminars

Policy workshops are organised with the intention of stimulating and integrating teaching, research and advisory work in the fields of the Institute activities. Each workshop takes 15-25 participants from developing and developed countries. Participants are selected and invited by the Institute and in most cases a few countries only are represented in each workshop which may be held in Netherlands or in another country. The ISS bears the cost of the participants air faires from their home base and provides an allowance to meet the cost of their stay.

10. Admission requirements

(a) MA (development studies): The main requirement is a sound academic background, preferably in one of the social sciences. Applicants must hold at least a Bachelor's Degree or its equivalent (as determined by the Netherlands University Foundation for International Co-operation (NUFFIC)) and proficiency in English language is essential. Preference will also be given to candidates who have three or four years' working experience. Applicants should clearly indicate the subjects they wish to study, particularly the specialization they wish to register for, and relevance of those subjects to their work.

(b) M.Phil (development studies): The principal requirement for admission to the M.Phil. programme is that candidates are able to do advanced research. Candidates should normally have an M.A degree. Proficiency in English language is essential. A careful assessment will be made of each candidate (through ex-ante examinations, interviews, etc.). A candidate can only be accepted after at least two ISS staff members have indicated their willingness to act as supervisor. A research proposal (of maximum 200 words) should be added to the application and should indicate (1) the objective(s) of the research, (2) hypotheses/ideas guiding the planned research activities, (3) the methodology that will be used, and (4) the relevance of the research to discussions in literature and policy making. The research work proposed by each candidate must be connected to ongoing research activities of ISS.

(c) Ph.D (development studies): Admission to Ph.D studies will in principle be restricted to outstanding and fully qualified candidates whose Ph.D thesis coincides with the research programme areas of ISS.

(d) Diploma programmes: Requirements are an appropriate Bachelors' degree, a good command of the English language, and several years of experience in either academic work or in government or private agencies. Such points as motivation and the future value to the applicant of the chosen programme will also be considered.

Admission procedure to all programmes is on a competitive basis. Applications should be made by means of forms supplied by ISS and by Netherlands Embassies or other diplomatic representatives abroad.

11. Fees

For 1985-1986 academic year the fees are as follows:

Registration	Dfl. 100,-
Diploma programme (6 months)	Dfl. 2000,-
M.A. programme	Dfl. 5000,-
M.Phil. programme	Dfl. 5000,-
Ph.D programme	Dfl. 5000,-

Research expenses

All programmes (dependent on the research
design and individual sponsor) ± Dfl. 1000,-

12. Fellowship

Some applicants will pay their own way while others will benefit from a fellowship. The admission procedure is however independent of any attempt to obtain a fellowship. Fellowship applicants should therefore distinguish between the two procedures and channel each application in a proper manner.

Some participants from developing countries are granted fellowships by the Government of the Netherlands and in a limited number of cases by the European Economic Community (EEC). At times, fellowships have also been granted by the United Nations and its specialised agencies, the World Council of Churches, the Ford Foundation, the Rockefeller Foundation, the World Bank, the Norwegian Agency for International Development and by various governments.

The EEC makes fellowship available to participants from associated ACP developing countries. Information can be obtained through the national EEC representative.

The Government of the Netherlands offers fellowships as part of a bilateral programme instigated particularly to the benefit of nationals of developing countries through its Department of Development co-operation. Fellowships are sometimes granted by the Ministry of Education and Sciences. Information may be obtained through the Netherlands Embassies in the respective countries.

The Institute of Social Studies does not offer fellowships on its own account. A limited number of research fellowships are offered by the ISS to scholars preferably from Third World countries. These fellowships are for periods of approximately five to ten months during each academic year to give them an opportunity to develop and/or complete research at the Institute. These fellowships are meant primarily for social scientists of established academic reputation in the Third World who wish to carry out research which includes elements that can most usefully be studied in Europe.

13. Living conditions

The ISS is located in a pleasant residential area of The Hague, close to the coastal dunes and the seaside resort of Scheveningen. It has well-equiped classrooms, conference facilities, a specialized library, a computer and audiovisual materials. The building has no residential facilities and the Institute has rented several houses in the city and adapted these for student accommodation. A housing officer is responsible for allocating rooms to participants.

14. Intake and output

-

15. Sponsors or funding agencies

The Institute main source of finance is the Dutch Government subsidy received from the Minister of Education and Science and forms part of the budget of the Minister for Development Co-operation. Additional finance is obtained through project financing usually given on a competitive basis. Recently there have been tendencies to diversify the sources of ISS income partly by making use of Dutch bilateral sources notably the research programme bilateral aid allocation and special programmes of aid. There have also been a number of contracts with other potential financers: the European Development Fund, World Bank, SIDA and others, and it is hoped to exploit those alternative sources more fully in the coming years, although it is difficult to see how a regular flow of income could arise therefrom.

16. Link with other Institutions

In addition to diploma and degree courses offered by the Institute, shorter programmes of study are developed, for example in the field of Labour studies and communications. The programme in Labour studies is held in various Third World countries in co-operation with national and local government, trade unions universities and other institutions. The educational activities in this field are directly linked to current ISS research.

The communication programme covers such fields as communication policies, the operational planning of communication system and the evaluation of communication policies. This programme is suited to those personnel from Ministries of Information and Education, mass media professionals and communication researchers. In July/August 1985 the programme will be held in the Asian region (Penang, Malaysia).

Two regional development planning projects in co-operation with the Asia Institute of Technology in Bangkok, and the University of Zimbabwe are in operation in 1984/85. Another project "the Modelling of the Indonesian Social Accounting Matrix" is being implemented in collaboration with the Central Bureau of Statistics (BPS) in Jakarta.

17. Language(s) of Instruction

The official language of the Institute is English.

18. African countries served

No countries are excluded.

19. Facilities available

Library and documentation: The Institute's library specializes in English language literature in the social sciences, with an emphasis on development problems. It contains approximately 27,500 books and 22,000 smaller publications (reports, pamphlets, etc.) and 530 periodicals. The book collection increase at the rate of roughly 1,500 volumes per year.

Health and medical care: All foreign students are required to have adequate health insurance coverage for themselves and any accompanying dependents. Holders of Netherlands Government fellowships will automatically be insured on arrival in Netherlands, but this does not cover any family members who may be with them. Other participants and all accompanying dependent must take out health insurance on arrival, the premiums being their own responsibility.

Computer: The Institute has computer facilities.

20. Research Activities

Although ISS faculty members have always been involved in research, it is mainly since 1977 that systematic attempts have been made to draw these activities together into a more integrated programme. The main emphasis of this programme is on "Applied" policy-oriented studies. Several themes have been identified as main areas of ISS research:

(a) Development Policy and the State
(b) Agricultural Development and the Rural Poor
(c) International Economic Issues
(d) International Relations
(e) Key Areas of National Economic Policy
(f) Labour and Development
(g) Women and Development
(h) Urban-Rural Relations and Metropolitan Development

21. Consultancy/Advisory services

The ISS Advisory Services (ISSAS) is a focal point for most ISS advisory activities, including a variety of assignments for governmental and non-governmental agencies and organisations in and outside the Netherlands. ISSAS has access to social science expertise and has priority issues for improvement of the condition of the rural and urban poor in the developing world. The assignments that ISSAS undertakes range from the critical analysis of development policies to support and guidance in the formulation, execution and evaluation of programmes and projects and deal with regions in which the ISS has acquired considerable experience: Latin America, Tropical Africa, the Middle East and South and East Asia. The principal assignments which ISSAS has thus far undertaken, participated in, or initiated on request by the Dutch Ministry of Foreign Affairs include the following:

- An environmental assessment of the Netherlands bilateral development effort, in collaboration with the International Institute for Aerial survey and Earth sciences, the Royal Tropical Institute, and the International Agricultural centre.

- A land reclamation project in Lampung, Indonesia, to help ensure that the reclaimed land will benefit a target group of landless and marginalized farmers. A target group-oriented action programme has been prepared in close co-operation with the University of Lampung.

- A delta development project in Bangladesh - a socio-economic survey is in preparation which is intended to result in a target group-oriented programme of activities for which urgent attention is needed.

- Advisory missions to Nicaragua to assist in developing an effective system for the programme of national reconstruction.

- Evaluation missions to Pakistan, Yemen Arab Republic, Colombia and Indonesia, addressing issues such as livestock development; forestry development; employment, income and basic needs; integrated rural development.

- A review and assessment of land settlement problems and policies in the tropics, for the Dutch Minister of Development Co-operation, in relation to discussions in IGGI meetings in trans-migration.

Advisory mission undertaken for other agencies include an evaluation at the request of the EEC of the activities of the European Development Fund in the fields of education and training, on the basis of evaluations in several sample countries (Ethiopia, Niger, Cameroon, Togo, Somalia, Jamaica, Antilles); a seminar on development issues organized in co-operation with the Training Section of the UNDP for its senior executives; and advisory work for the FAO in relation to animal diseases and related developments.

22. Student follow up programmes

The Institute publishes the Alumni Newsletter called "The Snowball". This newsletter helps the Institute to keep in touch with former students and also to hear from them on how they are advancing in their various careers.

23. Technical co-operation programmes

Project activities are a rather special aspect of the Institute's work and form a central element in the collaboration between the ISS and institutions in the Third World. They are the main means by which ISS capabilities in teaching, research and advisory work are made available to counterpart institution building in developing countries.

Of the technical co-operation projects currently in operation, the following examples are given:

(a) Teaching and Research in Regional and Rural Development and Planning, in co-operation with the Development Studies and Research Centre (DSRC), Faculty of Economic and Social Studies, University of Khartoum, Sudan. Under the first phase of this project, a post-graduate teaching and research programme in regional planning and rural development was initiated in 1979 to support the programme of regionalization in the Sudan. The project, of which the second phase will be conducted in September 1985, aimed at setting up a post-graduate Diploma Course in Regional and Rural Development and Planning and a Master's Degree in Development Planning at the Development Studies and Research Centre, University of Khartoum, as well as programme-related research in regional and rural development and planning. In the Master's degree programme, people from adjoining countries in the Region are admitted, in addition to Sudanese participants.

(b) The Modelling of the Indonesian Social Accounting Matrix. This project, which arose out of the earlier project on "The Measurement of Social Welfare in Indonesia", aims at constructing a socio-economic policy model for equitable economic growth and at compiling a new and more updated System of Socio-Economic Accounts, which is an extension of the more familiar Social Accounting Matrix. The project is being implemented in collaboration with the Central Bureau of Statistics (BPS), Jakarta, and will culminate in a policy seminar in Indonesia in 1986 at the end of the project period.

(c) Money, Finance and Development: The Role of Money and Finance in the Tanzanian Economy.

This short-term specific project aims to study the impact of recent changes and shocks in the world economy, in particular in its monetary and financial systems, on the economy and development of developing countries with particular reference to Tanzania. The study, which will be finalized in 1985, hopes to lead to a better understanding of (i) how the international monetary and financial shocks affect the international structure of a developing economy; (ii) the working of monetary and financial mechanisms and institutions in developing countries, and through that of the effectiveness of stabilization policies in these countries; and (iii) more generally, the contribution of macro-economic policy to growth and income distribution in the developing countries. This research, which is being carried out in collaboration with the Institute of Finance Management in Dar-es-Salaam, is proposed to be extended to other developing countries.

1. Country : United Kingdom

2. Name of the Centre: Applied Statistics Research Unit (ASRU)

3. Attached to : Mathematical Institute,
University of Kent at Canterbury

4. Address : Applied Statistics Research Unit
University of Kent at Canterbury
Mathematical Institute
The University
Canterbury, Kent CT2 7NF
United Kingdom

Telegraphic Address: UNIKENT
Telex: 965449
Telephone: 0227 66822

5. Name of the Director : Dr. Philip M. North

6. Objectives

Three main courses are at present offered by ASRU.

(a) Sample Surveys in Agriculture and Rural Development (SSARD)

The main objectives are to provide participants with a sound theoretical basis on which to plan and carry out sample surveys, guidance on methods of land area measurement and sample plot selection for land area and yield estimation. An insight into the practical problems of organising sample surveys, an introduction to modern computing methods for the analysis of surveys, and guidance on the interpretation and presentation of the results for governmental and international agency planning and development, are all included.

(b) Crop Experimentation in Developing Countries (CEDC)

The CEDC course is intended to teach methods of design and analysis of crop experiments with practicalities always in view, in as wide a context as possible, and with emphasis on tropical crops. It is designed for agronomists and biometricians, and aims to cover all stages of an experimental programme from initial planning to final analysis and report.

(c) Postgraduate Course in Statistics

Courses of study leading either to a Diploma in Statistics or M.Sc. in Statistics.

In addition, the Unit can run courses in various areas of statistics either at the University of Kent or at a host institution in Africa. Possible courses are in Elementary and Intermediate Statistical Methods, Regression Analysis, Analysis of

Variance, Multivariate Analysis, Time Series Analysis and Forecasting, Clinical Trials Analysis, Survey Analysis, Design and Analysis of Experiments, Industrial Statistics and Statistical Computing. Other possibilities can always be considered when a request is made to the Director.

The Unit also offers a consultancy service in statistics, and can handle data analyses. Large-scale population surveys have been analysed for various countries.

Statistical computer software is also being developed by the Unit, including packages for analysis of experiments, multiple regression analysis and sample survey analysis.

It is possible to make arrangements for staff from other institutions to spend time working with ASRU, and gaining a training in statistics at the same time. There is close collaboration between ASRU and the Statistics Department of the University in this area.

7. Brief historical background

The Applied Statistics Research Unit (ASRU) was founded in 1980 at the University of Kent with the objective of bringing a closer collaboration between universities, industry and other organisations, both within the United Kingdom, and overseas. Statistics is a practical subject and there are many advantages to both sides in this kind of collaboration. ASRU is able to offer a very high level of expertise in solving a wide range of statistical problems. The practical contacts help to keep universities aware of current problems in industry and elsewhere, and are a stimulus to research developments.

ASRU has had a considerable amount of experience of contact with African countries, both through attendance by Africans at courses run at Kent and through the activities of ASRU's consultants in developing countries.

8. Professional staff

In addition to the Director of the Unit, ASRU uses the services of an Hon. Professor of Econometrics, an Hon. Professor of Biometry, a Consultant in Field Experimentation a Consultant Advisor, particularly in agriculture and surveys, a Consultant in Applied Statistics, a Consultant in Medical Statistics, one further consultant, four Research Fellows, one Research Officer and four Research Associates. Apart from those directly employed staff, ASRU has access to the permanent Statistics Teaching Staff of the Mathematical Institute at the University of Kent at present comprising one Professor, one Reader, one Senior Lecturer and four lecturers. Some projects require experts in more than one field to collaborate such as statisticians, numerical analysts, computer scientists and others. ASRU can operate particularly efficiently with such projects, since these specialists are all close together within the university. In addition, lecturers for the residential courses held by ASRU have come from universities and research institutes throughout the United Kingdom, as well as from the Food and Agriculture Organization of the United Nations and from the Overseas Development Administration.

9. Teaching programmes

ASRU organises and runs special courses, at many different levels, in the statistical field. Expert staff provide the lecturing, which may take place either at the University, or at the host institute's own premises. Twelve-week residential courses held by ASRU at Canterbury each summer are on:

Sample Surveys in Agriculture and Rural Development (SSARD)
and Crop Experimentation in Developing Countries (CEDC)

Courses can also be provided at the client's request and in this case all details are discussed with the client to ensure that the course is precisely what is required. The Statistics Department of the UKC also offers an M.Sc./Diploma in Statistics Course.

10. Admission requirements

SSARD Course - Participants should ideally have a degree in statistics or an equivalent qualification. However, candidates with lower qualifications (e.g. - 'A' level or Stage I of the Institute of Statisticians) will be considered if they have some relevant experience. An ability of understanding elementary algebra and statistical concepts is essential.

CEDC Course - Agronomists should have had experience of field work. They should have O-level mathematics with a readiness to use it. They should hold a degree in agriculture, botany, biology or some related subject. Biometricians should preferably have a degree in mathematics with a component of statistics. It will be assumed that they are familiar with more usual types of design used in field experiments and with the analysis of variance.

Postgraduate Course in Statistics - A first or second class honours degree involving the study of mathematics for at least one or, preferably, two years. The course is thus suitable both for mathematics graduates, and for students with a science or social science degree with a mathematical component; prior knowledge of statistics is not essential.

All participants must be fully proficient in the use of English, both spoken and written.

The number of entrants which can be accepted for SSARD and CEDC courses each year is 25.

11. Fees

Tuition fees for the SSARD and CEDC courses are included in the fully residential course fee (which in 1987 amounts to £3950 for a 12-week course).

Tuition fees for the Postgraduate Course in Statistics for the 1986/87 academic year amounted to £3480.

12. Fellowships

Candidates from ACP, Mashrak and Maghreb countries who wish to apply for admission to courses may receive a Fellowship from the EEC covering travelling expenses to the U.K. and course fees including accommodation costs. Candidates wishing to apply for one of these Fellowships should do so on the official application form, which can be obtained from the local EEC representative and should be submitted to the address on the form through, and after endorsement by, their own Government.

Candidates from developing countries which have a Technical Co-operation Agreement with the British Government may be eligible for Technical Co-operation Training Awards offered by the British Government if they are nominated for such awards by an agency of their own Government. Such candidates can obtain information about the application procedures from British overseas posts in their countries - usually from the British Council, or from the British High Commission or Embassy where there is no local British Council Office. T.C.T. awards provide financial support for study fellows, including their travel expenses, their living expenses in the U.K. during the period of the course, and their fees.

It is also possible that training funds may be available to a candidate's country from the United Nations Food and Agriculture Organisation, or other U.N. agencies. Applications should be made in the first instance to the U.N. Resident Representative. Agencies funding Projects may sometimes approve attendance at a Course by one or more persons, and application in these cases should be made through Project Directors.

13. Living conditions

Accommodation is in single study bedrooms. Meals are provided in one of the four College dining halls, and all course participants have access to all university facilities such as the Library, Dillon's Bookshop, Sports Centre, Medical Centre.

14. Intake and output

There have been 52 participants from 16 African countries on SSARD and CEPC - see attached table. Altogether participants have come from 39 countries worldwide.

15. Sponsors or funding agencies

ASRU is a self-financing organisation but assistance has been received from:

(a) Overseas Development Administration
(b) The British Council
(c) European Economic Community
(d) Food and Agriculture Organization of the United Nations
(e) University Grants Committee, London
(f) World Bank

16. Link with other institutions

Regular contact is maintained with Wye College, the agricultural department of the University of London, which is situated nearby. ASRU also has a large network of further contacts with academic institutions, research centres and industry, both within the United Kingdom and overseas.

17. The language(s) of instruction

English

18. African countries served

All English-speaking African countries. The SSARD and CEDC courses can each accommodate 25 participants each year. The number admitted from each country is dependent on the number of applicants who are successful in obtaining funding to cover the costs of the course fees. Africans also attend the Postgraduate Course in Statistics.

Participants on the SSARD and CEDC courses from Africa

Country	SSARD	CEDC
Sudan	1	1
Egypt	3	-
Gambia	1	-
Sierra Leone	2	-
Liberia	7	-
Ghana	1	-
Nigeria	11	1
Ethiopia	1	-
Kenya	1	-
Tanzania	7	1
Malawi	3	-
Zimbabwe	5	-
Lesotho	1	-
Swaziland	1	-
Botswana	1	-
Zambia	4	-

19. Facilities available

The University has a large, well-stocked library and receives regularly most of the leading statistical journals. Course participants have access to the computing facilities within the Mathematical Institute, as well as the extensive facilities in the nearby Computing Laboratory. Both mainframe and microcomputers are available. There is a well equipped Sports Centre, with both indoor and outdoor facilities, and there is a Medical Centre on campus.

20. Research activities

The staff of both ASRU and the Statistics teaching group undertake a comprehensive research programme in Statistics, covering many areas of statistics. The research interests of the staff include:

Statistical ecology, medical statistics, clinical trials, multivariate analysis, time series, forecasting, seasonal adjustment, econometrics, non-linear minimisation, biological applications of statistics, design and analysis of experiments, crime, survey analysis, survey methods and agricultural surveys, field technique in agricultural experiments and surveys, sampling inspection and quality control, statistical computing, multiple regression, stochastic population processes, psychological applications of statistics, interactive methods, meteorological applications of statistics, theory of inference, reliability theory, life testing, statistical inference under order restrictions, linear and generalized linear models, cluster analysis, response surface methodology, analysis of repeated measurements, statistics in fisheries and ornithology.

21. Consultancy/Advisory services

ASRU offers a comprehensive consultancy service in statistics, and has access to specialists in most areas of statistics. Consultancy work can be undertaken at the University of Kent, or arrangements can be made for consultants from Kent to visit institutions in Africa, as required.

22. Student follow-up programmes

These can be arranged on request.

23. Technical co-operation programmes

These can be arranged on request.

1. Country : United Kingdom

2. Name of the Centre: The Institute of Development Studies (IDS)

3. Attached to : The University of Sussex

4. Address : The Institute of Development Studies
at the University of Sussex
Brighton, Sussex BN1 9RE
United Kingdom

Cable: Development Brighton
Telex: 877997 IDSBTN G
Telephone: Brighton (0273) 606-261

5. Name of the Director : Professor Mike Faber

6. Objectives

The overiding objective of the Institute is to do work that will help to lessen the prevalence of poverty amongst countries in the developing world and by so doing to enlarge the scope for individuals within such countries to live lives of dignity and fulfilment. The academic staff who work both in U.K. and overseas are involved in research, teaching and operational assignments embracing a wide range of development problems within Third World countries.

The IDS also serves as an international forum for discussions and debate about issues of common concern and through its courses and visiting fellowship programmes attracts academics and development practitioners from a wide variety of backgrounds.

7. Brief historical background

The Institute was established on the campus of the University of Sussex in 1966 as a centre concerned with Third World development and the relationships between rich and poor countries. The staff which includes fellows, visiting academicians and research officers work both at home and overseas.

8. Professional staff

There are 35 academic staff at the centre. These include the director and deputy director of the centre, 30 fellows and three research officers.

9. Teaching programmes

(a) Graduate studies: The Institute's academic staff are centrally involved in teaching and supervision in the Development Studies Graduate Division of the University of Sussex Graduate School in Arts and Social Studies. The work of the division comprises: a two-year course work programme, with an annual intake, leading to the degree of M.Phil (Development Studies); the supervision of students working towards the degree of M.Phil or D.Phil by research. From October 1987, the Institute and the University are launching a new one year MA in Gender and Development.

Twenty five D.Phils in development studies have been awarded by the University of Sussex from 1966 to 1983. So far 30 M.Phil development studies degrees have been awarded. The M.Phil degree in Development Studies is an interdisciplinery course work programme or by research and started in 1975 with annual intake since 1980.

(b) Seminars and short courses: The Institute runs a programme of seminars and short courses on key areas of development policy and analysis which aim to help administrators, researchers, teachers and other development practitioners to develop new skills, to learn more about current work and to exchange experience with their counterparts from other countries. Details of various study courses, seminars, groups and conferences are given below:

Study courses are normally of three months duration and normally two or three study courses are conducted per annum.

Study seminars are of 5-6 week duration. Upto 119 study seminars and 8 study courses have been organised since 1966. They cover a wide range of topics reflecting IDS research and operational activities.

Study groups - these are tailored to sponsoring agencies' requirements for 5-20 participants and are subject to staff availability.

Conferences/workshops/seminars - normally 6-10 per annum and are internally or externally sponsored.

10. Admission requirements

(a) M.Phil. (Development studies) (by course work) and MA in Gender and Development. A good honours degree or its equivalent is normally required and relevant work experience especially in a developing country is an advantage.

(b) D.Phil and M.Phil (Development studies) (by research). Candidates are expected to hold a Master's degree or equivalent qualification. Candidates for these research degrees of the University of Sussex are normally supervised by members of the Institute. The Institute does not provide a formal program of research training but candidates are required to present their research proposal for discussions and approval and are expected to attend the weekly program of seminars arranged for this purpose as well as occasional in progress seminars.

(c) Seminars and short courses

Depending on the type of seminar, candidates are expected to be employed by their Governments or other organisations and have sufficient experience to benefit from such courses. Administrators, teachers and other development practitioners are the type of personnel admitted to the seminars and courses at IDS.

Numbers admitted in some recent courses are as follows:

- Development statistics course, 19 April - 16 July 1982, 13 candidates were admitted to the course, seven of which were from Africa.

- Development statistics course, 11 April - 8 July 1983, 14 candidates were admitted to the course of which 13 were from Africa.

- Development statistics course, 30 April - 27 June 1984, 17 candidates were admitted to the course of which 12 were from Africa.

- Development statistics course, 3 June - 30 August 1985, 14 candidates, 9 from Africa.

- Development statistics course, 4 August - 31 October 1986, 25 admitted, 17 from Africa.

11. Fees

(a) M.Phil degree: £3,950 per annum including student union fees for all students regardless of their country of origin.

(b) MA degree: £3,800 for overseas students.

(c) Seminars and short courses: The fees vary from course to course; An example is the following:

- Development statistics; 4 January - 25 March 1988, £3,120 (course fee) and £1,470 (accommodation & breakfast).

12. Fellowships

(a) Graduate studies

Possible sources of finance are the British Government Technical Co-operation Awards, Commonwealth Scholarships, British Council Scholarships, European Development Fund Scholarships, Ford Foundation, UNDP Fellowships, SSRC awards may be available to selected U.K. students. Applicants are strongly advised to contact their local ministries of Education/Foreign Affairs, British Council Representatives and other relevant agencies without delay for advice on possible sources of finance. Early applications for scholarships should be made as closing dates are often 12 months ahead of the University closing date of 1 May each year. Further information on possible financial support and procedure will be provided on request when applying for the prospectus from the University's Graduate School.

(b) Study seminars and short courses

For those who do not have their own funds, various sources of funding are available, for example, British Government Technical Co-operation Awards or the United Nations Agencies (such as UNDP). Funding bodies such as the Ford Foundation or Rockefeller Foundation or the European Development Fund in the case of persons from the ACP countries. A more detailed list of funding bodies, eligibility and procedures is available from the IDS.

13. Living conditions

The modern Andrew Cohen building which houses the Institute contains residential facilities for conference and short course programmes. There are occasions when accommodation is available for visitors to the campus for short periods in between on-going activities.

The residential wing contains 27 single study bedrooms and five flats (three small and two family size). For each study bedroom there is a shared bathroom. Flats are completely self contained with sitting room kitchenette, bedroom(s) and bathroom/WC. TV is installed in all flats. These are for self catering but breakfast can be obtained in the Institute's common room as an extra if required. The University's own restaurants and shops are available to residents including bars.

The building contains spacious and well equipped teaching areas varying from lecture rooms capable of holding up to 100 delegates to smaller, more intimate seminar rooms.

14. Intake and output

See item 10(c) and 18.

15. Sponsorships or funding agencies

Finance is provided partly by a grant from the British Overseas Development Administration of the Foreign and Commonwealth Office and partly from the commissioned work, course fees and research grants.

16. Link with other institutions

IDS staff are involved in both longer term opperational attachments of various kinds and many shorter visits for research training and teaching activities and commissioned work. These involvements are both in U.K., other developed countries and developing countries which include African countries.

17. The language(s) of instruction

English

18. African countries served

Courses are available to funded applicants from any country of origin (subject to qualifications and competence in English). African participants feature strongly in our programme and a recent study seminar on structural adjustment is strictly for sub-Saharan Africa. In 1986, participants attended from: Nigeria, Tanzania, Sierra Leone, The Gambia, Ethiopia, Zambia, Lesotho, Guinea Bissau, Kenya, Zimbabwe, Cameroon, Uganda, Mozambique and Ghana.

19. Facilities available

(a) Library - The IDS Library is a national centre of documentation on Third World development and is an official depository for UN publications. The collection now exceeds 100,000 non serial titles and can be used by scholars by arrangement. The library is about to embark on a programme of automation.

(b) Computer - All students registered for graduate degrees have access to the University's main frame VAX computers.

(c) Health - There is a University Health Service.

(d) Sport/recreation - The sport service on campus caters for an organised sport and team games.

20. Research activities

Because of a cut back in IDS core grant, fellows have been lately undertaking a growing number of operational assignments. Research normally concentrates on issues relating to poverty, employment and income distribution, with Third World countries and to the unequal relationship between the Third World and the rest of the World Economy.

21. Consultancy/Advisory services

Fellows of the Institute undertake a wide range of advisory commissions for Governments, UN agencies and non-governmental organisations.

22. Student follow up programmes

There is an alumni association for M.Phil and D.Phil ex-students. Study course participants keep in touch through informal newsletters, etc.

23. Technical co-operation programmes

-

1. Country : United Kingdom

2. Name of the Centre: Department of Statistics

3. Attached to : University of Newcastle upon Tyne

4. Address : Department of Statistics
The University
Newcastle upon Tyne
NE1 7RU
United Kingdom

Telephone: 091 232 8511
Telex : 53654
Telegraphic Address: UNINEW G

5. Name of Director : Professor G.B. Wetherill

6. Objectives

The aims of the Department are threefold:

(i) to train students in Statistics;
(ii) to conduct statistical research; and
(iii) to provide advice on the application of statistical methods.

The first objective is met by the provision of a variety of courses described below (section 9). The second is fostered by individual research and by collaborative work in conjunction with a number of institutions. The third objective is met by the statistical consultancy service which provides advice both within the University and to outside bodies.

Collaborative activities are co-ordinated by the Industrial Statistics Research Unit (I.S.R.U.) set up within the Department specifically to foster contacts with Industry, Commerce and Government Departments.

7. Brief historical background

Newcastle University is a large civic university with over 8,000 students including more than 1,000 postgraduates. The Department of Statistics has existed for over 20 years and has developed during that period into a leading department with an international reputation. The current head, Professor G.B. Wetherill, was appointed two years ago. He has considerable experience of consultancy work with developing countries, especially in Africa. He was previously at the University of Kent where he set up the Applied Statistics Research Unit which became an STPA Centre. The department has close links with Makerere University, Uganda.

8. Professional staff

The permanent members of staff of the department are Professor Wetherill, Dr. P.J. Avery, Dr. R.J. Boys, Dr. D. Brook, Dr. T.F. Cox, Dr. K.D. Glazebrook and Dr. R. Henderson. In addition there is a temporary lecturer and four research associates working on various projects. Within the University there is close contact with other statisticians in the Department of Medical Statistics and with researchers in Agriculture, Engineering and Medicine.

9. Teaching programme

The department offers the following courses:

(a) M.Sc. course by Summer School. This is a quite new type of course, and is designed to be taken as two successive summer courses of ten weeks each. A project can be done in a third summer, or else in between the first two summers. The project can be done at the student's own centre. This may be of special interest to developing countries for staff training. A descriptive leaflet is available.

(b) Undergraduate courses. B.Sc. courses in Mathematics and/or Statistics are offered, as well as joint courses with Computing Science or other subjects. See undergraduate Prospectus and departmental booklet for details.

(c) Individual Summer School units. These are of one to three weeks in length, and a total of ten weeks of such courses is available each summer. A leaflet is available.

(d) Short courses in statistical topics can be mounted at overseas centres by special arrangement.

10. Admission requirements

For undergraduate courses, 9(b) above, a level of mathematics equivalent to a British 'A' level in Mathematics is required, although a wide range of alternative qualifications are possible. A preliminary course is available for those whose general ability is high, but whose background in Mathematics is limited.

For postgraduate work and courses, a degree or equivalent is needed. Some basic mathematics is needed, but preparatory courses can be made available.

For individual courses, the requirements vary considerably and should be negotiated directly.

Prospective applicants should write to the Director for more details.

11. Fees

The tuition fees for undergraduate and postgraduate courses are those set by the University for non-laboratory subjects. For 1986-87 they are £3,480 + £400 departmental support grant. In the case of the Summer School, this is the total amount payable over the two summers.

12. Fellowships

M.Sc. training via the Summer School is acceptable for Technical Cooperation Training awards under the auspices of the United Kingdom Overseas Development Administration.

13. Living conditions

Accommodation is available in single study bedrooms in Halls of Residence. Newcastle is a major city and as a Regional Capital has all the facilities one might expect.

14. Intake and output

The number of students on the M.Sc. course by Summer School is limited to 20.

15-16 Sponsors or funding agencies

The Department is supported by the United Kingdom Government through the University Grants Committee. Individual research work is sponsored both by Government agencies and by industry.

17. Language of instruction

All teaching is in the English language. Language learning facilities are available through the Language Centre which is equipped with up-to-date teaching aids.

18. African countries served

All countries are served.

19. Facilities

The University is among the largest of the British Universities and has excellent library and computing equipment. There is a Language Centre described under (17) and excellent sports facilities. The City has a full range of services and there are fast and frequent air and rail links with London.

20. Research activities

Some research arises out of a survey program written for developing countries, viz 'Data quality control' and 'The analysis of complex survey data'. The departmental research also covers knowledge engineering and expert systems, design and analysis of experiments, multivariate analysis, stochastic scheduling, mathematical genetics, statistical computing, sampling inspection and quality control.

21. Consultancy/advice services

The department organises a consultancy service throughout the University, especially to the Faculty of Agriculture. Consultancy services are also available to outside companies and institutions, at a negotiated fee.

22. Student follow-up programmes

We keep in close contact with former students. Further courses can be arranged for those who wish to extend their statistical education.

23. Technical co-operation programmes

The department has excellent technical co-operation with several large British industries, and welcomes co-operation from overseas centres.

1. Country : United States of America

2. Name of the Centre: International Statistical Programs Center (ISPC)

3. Attached to : United States Department of Commerce
Bureau of the Census

4. Address : Training Branch
International Statistical Programs Center
Bureau of the Census
Washington, D.C. 20233
U.S.A.

Telephone: 1-301-763-2860
Telex: 892360 CENS BUR WSH

5. Name of the Director : Dr. Kenneth P. Bryson

6. Objectives

The program is designed to provide practical training for persons in statistical organizations who have responsibility for data collection and processing operations as well as for those engaged in research and analysis. The principal objectives of the program are to equip participants with the knowledge and skills needed (1) to perform professional duties in a specialized area of applied statistics or data processing and (2) work effectively with other specialists on a census, survey, or similar complex statistical project. The program emphasizes basic analytical and problem solving skills which enable participants to apply what they learn to the work that they do in their own countries.

During the training, participants learn about specific applications of statistical and data processing technologies in various developing countries and in the United States. Participants exchange experiences with colleagues from other countries with similar resources through classroom discussions and informal conversations after class. The training program offers opportunities for participants to meet and talk with professional statisticians and data processing experts in both government and private agencies in the United States and to observe their work. They are introduced to and have hands-on experience using new technologies which are, or soon will be, available in their countries.

Modern survey and census methods are incorporated in case studies and training manuals. A state-of-the-art computer laboratory gives participants experience in using ISPC and other software packages on both a large mainframe and microcomputers.

A demonstration survey laboratory and field exercise give all participants a chance to work together on a real survey project. This training activity demonstrates the technical and organizational linkages between the participant's specialized skills and those of others involved in a complex statistical system. Training skills taught in the ISPC training program and practiced in the demonstration survey help participants to assist others in their countries in developing similar skills, thus introducing an important multiplier effect at the national level.

7. Brief historical background

In 1946 a formal statistical training program was established at the Bureau of the Census. This program was part of the U.S. effort in training and technical assistance to Western Hemisphere countries involved in the 1950 Census of Agriculture.

In 1949, when the United States adopted a program of technical co-operation and assistance on a worldwide basis, the geographical scope of the training was extended to Asia, Africa, and the Middle East. Over the years, as needs changed, both program content and methods of instruction changed. Increasing attention has been given to applications of computer technologies (most recently, microcomputers and general-purpose statistical software). Joint master's degree programs have been established with Washington area universities. However, the program has continued to emphasize practical aspects. For example, realistic demonstration surveys designed and implemented by the participants under the direction of the training staff have been used to provide practical experience.

Emphasis has been placed on incorporating world and regional principles and recommendations in preparing the training programs and curricular materials. Experiences of Census Bureau experts who have been involved in providing technical assistance to developing countries also are valuable inputs. These principles, recommendations, and experiences have been incorporated into case studies detailing statistical operations for censuses and surveys in mythical developing countries--Atlantida, New Florencia, Popstan, Agrostan, and Providencia. These case studies and training manuals, such as *Mapping for Censuses and Surveys*, have served as the basis for English-, French-, and Spanish-language workshops conducted both in Washington and around the world. In August 1986, ISPC inaugurated a Spanish-language training center, Escuela de Estadistica Aplicada y Tecnicas de Computacion (ESAYTEC), in Washington.

8. Professional staff

Director (Chief, Training Branch) and 10 instructors (training advisers), plus part-time guest instructors/lecturers.

9. Teaching Programs

Annually, Training Branch, ISPC, conducts programs in English at its training center in a Washington suburb. These programs are designed to impart skills which men and women working in statistical offices, central banks, data processing centres, agricultural ministries, planning agencies, and similar organizations can apply immediately upon their return to their countries.

The U.S. Bureau of the Census is conducting three types of programs in 1986-1987. The first, from September 1986 to July 1987, consists of practical diploma training programs in the following areas: (1) sampling and statistical methods, (2) food and agricultural statistics, (3) demographic statistics, (4) economic statistics, (5) computer data systems, and (6) survey methods. These programs combine learning by doing with classroom instruction which is provided by the ISPC training staff with numerous guest speakers from other areas of the Bureau of the Census, Department of Agriculture, and other agencies. A 1-week management communication in development seminar is a basic element of the training program for all participants. A mid-winter community seminar and field trips also are arranged. The culmination of the training is an actual demonstration survey field exercise.

The second type are joint master's degree programs: (1) a 16-month Combined Degree Program conducted by the Bureau of the Census with The George Washington University leading to a Master of Science in Social and Economic Statistics, (2) an 18-month Demography Degree Program conducted by the Bureau of the Census with the Georgetown University leading to a Master of Arts in Demography, and (3) the 17-month Management Information Systems Degree Program conducted by the Bureau of the Census with The George Washington University leading to a Master of Arts in Administrative Sciences. These three joint degree programs combine the full ISPC diploma program with university graduate courses. It should be emphasized that these joint programs are predominantly practical and non-academic. Most degree program courses are conducted at the ISPC training center.

The third type are short-term certificate programs and study tours: (1) portions of regular ISPC curricula comprising certificate programs 3 to 10 months in duration; (2) special-purpose training on topics such as census-survey geography, printing and reproduction, field operations and mapping, or training of trainers; and (3) study tours 1 day to several weeks in duration of high-level visitors.

More detailed information about Bureau of the Census training programs in Washington is provided in the Bureau of the Census booklet, Statistical Training Programs, 1987-1988.

The Bureau of the Census also has developed a series of workshops in the areas of population statistics, survey methods, cartographic methods, and data processing. Workshops can be presented in English or French and are adaptable to the specific needs of a country. Special workshops on specific topics related to statistical activities can be developed on request. Workshops are conducted in-country, on a regional level, or in Washington. The duration is from 2 to 4 weeks depending on the subject matter.

More detailed information about the program is provided in the booklet, Catalog of Overseas Training Workshops.

10. Admission Requirements

The training programs are intended for working statisticians and data processing specialists who are employed in the national statistical office (or similar statistical unit) or data processing center in a developing country. Some working experience, at least a year, in the area of statistics or data processing in which the training is to be given is desirable; at least a year of general working experience in the statistical office or data processing center is required. Applicants must be fluent in English: an ALICU score of 70/70 is required. Mathematical skills, at least at the secondary school level of algebra, are required; prior training in statistics is desirable. Applicants for joining master's degree programs must have a baccalaureate degree, with acceptable grades, from a recognized university.

There is no institutional limit on the number of applicants who can be accepted for training in a particular year. Usually, 150 to 200 short-term visitors come to the Census Bureau annually. The number of participants in each of the training specializations varies from 10 to 50 at any time. Approximately one-fourth of the participants qualify for one of the joint master's degree programs.

11. Fees

Instructional fees total approximately $15,500 for a full-year diploma training program. These fees exclude participant subsistence and international travel costs. Total costs of training (including subsistence) average approximately $2,500 per month.

12. Fellowships

Participants are sponsored by the United Nations Development Programme, Food and Agriculture Organization, World Bank, and other United Nations agencies; Missions of the U.S. Agency for International Development; private foundations; and agencies of the participant's own government. Except as noted below, the Bureau of the Census has no fellowship funds and does not make recommendations to sponsoring agencies on behalf of prospective participants.

For participants sponsored by United Nations, a nomination form is sent from the local UN Representative to UN Headquarters in New York. Nominations for FAO-sponsored participants are sent from the local FAO Representative to FAO/Rome. If a participant is sponsored by the U.S. Agency for International Development, a PIO/P is sent from the USAID mission to AID/Washington. For other sponsors, nominations are initiated from the representative of the sponsoring agency in the participant's country and forwarded through appropriate channels to ISPC. Own government sponsors should write directly to ISPC for nomination instructions.

Each year, the Bureau of the Census will offer one tuition fellowship, the Calvert L. Dedrick Award, for a 4-month training of trainers program from September through December. The training will consist of ISPC first and second training period courses, seminars provided by other agencies on instructional design and training program implementation, consultation on curriculum development with ISPC training staff, and participation in training professional society activities. The fellowship will be awarded each year to a man or woman who has responsibility for designing and administering in-service statistical training in a statistically underdeveloped country. Directors and other key staff members of national and regional training centers should apply for this award.

13. Living conditions

ISPC staff members assist participants to find suitable living accommodations. Apartments are available within walking distance of the ISPC training center. While most participants choose to live in these nearby apartments, they are assisted to make living arrangements to meet their needs and preferences throughout the metropolitan area. Subsistence allowances paid by major sponsors are adequate to meet living expenses of participants.

14. Intake and output

See item 18.

15. Sponsors or Funding Agencies

The ISPC training center operates entirely on instructional fees paid by sponsors of participants. These sponsors are indicated in item 12.

16. Links with other Institutions

The Bureau of the Census international training program has co-operative arrangements with several U.S. Government agencies--Statistical Reporting Service of the Department of Agriculture, National Center for Health Statistics, Bureau of Economic Analysis, and Bureau of Labor Statistics. The food and agricultural statistics training program also is carried out in co-operation with the Food and Agriculture Organization of the United Nations. Joint master's degree programs are conducted by the Bureau of the Census with the George Washington University and Georgetown University.

17. Language(s) of Instruction

Washington-based training programs in English and Spansih; workshops in English, French, and Spanish.

18. African countries served

(a) African countries served by the training program by country and year (excluding visitors).

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	Total
Angola	-	-	-	-	-	-	-	-	-	1	-	1
Benin	-	-	-	-	-	-	-	-	1	-	-	1
Botswana	-	-	2	1	-	-	1	3	2	-	2	11
Burkina Faso	-	-	-	-	-	-	1	-	-	-	1	2
Cameroon	2	-	-	-	-	4	2	-	-	-	4	12
Congo	-	-	-	-	-	-	-	-	-	-	1	1
Ethiopia	-	-	-	-	2	-	3	1	2	-	-	8
Gambia	-	-	2	1	1	1	2	2	-	-	1	10
Ghana	2	1	1	2	4	3	2	-	1	1	3	20
Guinea	-	-	-	-	2	1	1	-	-	-	-	4
Kenya	2	4	3	4	6	2	1	1	4	-	-	27
Lesotho	-	-	1	-	1	1	1	-	-	1	1	6
Liberia	1	3	3	2	4	4	-	2	4	5	3	31
Libya	-	-	-	1	3	-	-	-	-	-	-	4
Madagascar	-	-	-	-	-	-	-	1	-	-	-	1
Malawi	1	-	2	-	-	-	1	1	2	1	1	9

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	Total
Morocco	-	1	-	-	-	1	-	-	2	-	-	4
Mauritius	-	-	-	-	-	1	-	-	-	-	-	1
Niger	-	-		-	-	-	-	-	-	1	-	1
Nigeria	6	4	9	8	11	12	13	15	2	4	5	94
Rwanda	-	-	-	-	2	3	-	-	2	1	3	11
Senegal	-	-	-	-	-	-	-	-	-	-	1	1
Seychelles	1	-	-	-	-	-	-	-	-	-	-	1
Sierra Leone	-	-	-	2	-	2	-	2	-	1	3	10
Somalia	-	-	-		1	-	3	1	5	-	-	10
Sudan	2	-	1	2	-	6	2	-	3	1	2	19
Swaziland	-	-	2	-	-	5	-	4	3	-	2	16
Tanzania	1	-	1	1	2	2	2	1	3	-	1	14
Uganda	4	-	2	-	1	-	-	-	-	1	-	8
Zaire	-	-	4	7	8	3	1	-	-	-	-	23
Zambia	2	-	-	-	1	1	-	-	1	2	5	12
Zimbabwe	1	-	-	-	-	-	5	-	3	-	-	9
TOTAL	25	13	33	31	49	52	46	34	40	20	38	391

Note: Participant counted in year program began.

(b) African countries served by workshops, by country and year: 1973-1984.

	1978	1979	1980	1981	1982	1983	1984	1985	Total
Benin	-	-	4	-	-	-	-	-	4
Botswana	-	1	4	-	-	-	-	-	5
Burkina Faso	-	-	7	4	-	-	2	-	13
Cameroon	-	-	10	-	-	-	2	-	12
Ethiopia	1	1	-	3	-	-	-	-	5
Gambia	-	-	-	-	36	-	-	-	36
Ghana	2	-	-	-	-	-	-	-	2
Guinea	-	-	3	-	-	-	-	-	3
Kenya	-	1	1	-	-	-	2	1	5
Liberia	-	5	3	2	-	-	-	-	10
Madagascar	-	-	1	2	-	-	-	-	3
Mali	-	-	-	-	-	-	-	1	-

	1978	1979	1980	1981	1982	1983	1984	1985	Total
Morocco	-	-	1	-	-	-	-	-	1
Mauritius	1	8	-	1	-	-	-	-	10
Niger	-	-	5	1	-	-	2	26	34
Nigeria	1	-	1	-	-	35	-	17	54
Rwanda	-	-	1	-	-	1	1	-	3
Sierra Leone	-	-	2	1	26	-	-	-	29
Somalia	1	5	2	2	-	-	44	-	54
Sudan	-	13	6	2	-	-	-	-	21
Tanzania	-	-	1	-	-	-	-	-	1
Uganda	2	-	4	1	-	-	1	-	8
Zaire	-	-	3	1	-	-	-	1	5
Zambia	1	-	4	-	-	-	-	-	5
Zimbabwe	-	-	-	3	-	-	-	-	3
TOTAL	9	34	63	23	62	36	54	46	327

19. Facilities available

A library and study area is provided for participants in the ISPC training center. The library has inter-library arrangements with other libraries, including the Library of Congress. A state-of-the-art computer laboratory gives participants hands-on experience using mainframe and microcomputer hardware and software. Participants have free access to the Bureau of the Census health unit. ISPC staff assist participants in making appointments with physicians for more serious medical problems. Health insurance, available at a nominal cost, pays costs of participant health care. A Participant Association arranges social and sports activities. Participants are invited to join the Census Bureau recreation association and use the facilities of the community recreation center within walking distance of the ISPC training center.

20. Research activities

Participants are encouraged to undertake independent study projects in conjunction with their ISPC curricula. Training advisers and experts from the Census Bureau and other agencies work with participants on these projects.

21. Consultancy/Advisory services

Training Branch staff are willing to assist national and regional training centers to develop their programs. A training of trainers program is offered at ISPC in Washington to build the capabilities of the instructional staff of these centers.

22. Student follow-up programs

Training Branch Newsletter provides a continuing channel of communication with former participants. Informal evaluation is based on contacts with former participants.

23. Technical co-operation programs

The Bureau of the Census, through ISPC, provides in-country technical assistance on both a long-term resident and recurring short-term visitation basis. Assistance is provided on sampling and survey design, census and survey planning and implementation, computer processing of survey and census data, installation and use of software for editing and tabulating data, monitoring and evaluation of development projects, and other topics.